Investigating Factors Which Promote Metacognitive Development in Early Years Children

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Helen Davey

Abstract

This study investigates the development of metacognition in Early Years children. The results indicate that early metacognitive knowledge and skills can be observed in children as young as four years old. Three Foundation Stage Two Classes were used for the first year of this project and children from across Foundation Stage Two, Year 1 and Year 2 for further research in the second year. All the children were part of one Primary School.

The data was collected through a range of Pupil Interviews and Classroom Observations of the adults who work with them. The data was analysed in four strands; whether children use the term learn and what factors influence that use, where children perceive learning to take place, whether children have a concept of what learning is and finally whether children demonstrate metacognitive knowledge and skills when encountering a problem. Consideration was given to the cognitive level of development of the child, to the influence of the class teacher on the child's perceptions of classroom life and to the use of language by adults and whether this factor impacts on the child's ability to verbalise their understanding.

The findings indicated that, with these Early Years children, cognitive development was not a significant factor in their demonstration of aspects of metacognition. However, the impact of the adults who teach the children can clearly be seen in all parts of the research, whether that is the language they use, where they position themselves in the classroom, the importance the children perceive they place on certain activities, or the way they present and talk through learning with children. In the final strand of the research, children aged four to seven were able to talk about strategies they use when encountering a problem in their learning. These strategies have been transferred between activities and found to be successful and in some cases clearly demonstrate metacognitive knowledge.

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Declaration

This thesis is the sole work of the author, and has not been submitted previously for a degree at Durham University or at any other University. Any references to the work of others have been appropriately acknowledged in the text.

Statement of Copyright

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List of Abbreviations

CASE@KS1	Cognitive Acceleration through Science Education
C.Ind.Le	Cambridge Independent Learning Project
CL	Communication and Language Development
DCSF	Department for Children, Schools and Families
DFE	Department for Education
ERIC	Education Resources Information Center
EYFS	Early Years Foundation Stage (children aged 0-5)
FS1	Foundation Stage One (children aged 3 and 4)
FS2	Foundation Stage Two (children ages 4 and 5)
IDACI	Income Deprivation Affecting Children Index
KS1	Key Stage One (children aged 5 to 7)
KS2	Key Stage Two (children aged 7 to 11)
KS3	Key Stage Three (pupils aged 11-14)
L2L	Learning to Learn Project set up by the Campaign for Learning
N1	Nursery Year 1 (children born between September and March who join Nursery in the term following their third birthday)
N2	Nursery Year 2 (children who have attained their third birthday by 31/8 and start N2 on 1/9)
OFSTED	Office for Standards in Education
PSED	Personal, Social and Emotional Development
TA	Teaching Assistant
Y1	Year One (children aged 5 and 6)
Y2	Year Two (children aged 6 and 7)

Chapter One

Introduction

In recent years there has been a greater focus than at any previous time, within Primary Schools, on how children learn. This attention has been largely aimed at ways of improving and individualising aspects of 'Assessment for Learning', particularly by the Office for Standards in Education (OFSTED) inspection regime. This has raised a number of questions for schools about the importance of 'learning to learn' and whether, if children were taught these skills, faster progress, better understanding and more durable learning would be made or better results, in pure academic terms, delivered.

Whilst the OFSTED view of 'Assessment for Learning' is somewhat limited in that, for instance, it focuses on a 'tips for teachers' approach rather than on developing the understanding of the child about how to improve their own learning, the field from which it was drawn is not. Once the 'tips for teachers' approach is discounted, there is a wide range of research that shows the development of metacognition can have a significant impact on how children approach learning, how they understand the concept of *learn* and subsequently, how they use this knowledge to improve their academic progress.

The term 'metacognition', coined in the 1970s by Flavell, links both metacognitive knowledge and metacognitive experiences and explains how these might influence the development of children as learners. Throughout the subsequent four decades the terms have been continually defined and

redefined by academics and educationalists. Aspects of metacognition have led to work on Assessment for Learning and 'learning how to learn'. Differences of opinion have occurred about when metacognition can actually be seen in learners and how it might be enhanced.

1.1 The Context of this Study

'Learning how to learn' is currently a focus for many people involved in education. However, a distinction needs to be made between the current Department for Education (DFE)/OFSTED approach to 'Assessment for Learning' and the original concepts brought together by Black and Wiliam in 1998 (cited in Black, Harrison, Lee, Marshall, and Wiliam 2003). Black and Wiliam completed a review of research into formative assessment from around the world and from different sectors of education which concluded that there was considerable evidence that innovations in formative assessment could lead to improvement in the learning of students.

Formative assessment is not a new idea. Stiggins (2005) cites Scriven in 1967 as the first user of the term. During the 1970s and 1980s interest was shown in a number of projects where formative assessment was used to inform summative assessments. However, the introduction of the National Curriculum in the late 1980s and the associated National Curriculum Tests (commonly known as SATs) effectively brought an end to the research. The concept of teacher assessment was disappearing and the role of the test and the importance of test results were regarded as paramount. By 1995 Black and Wiliam state:

> "Government was lukewarm or uninterested in formative assessment: the *systems* to integrate it with the summative had gone, and the further development of *tools* was only weakly supported."
>
> (Black and Wiliam, 2003, p.626)

Following the work of Black and Wiliam in 1998 a fundamental reversal of the importance placed on formative assessment began. The publication of a pamphlet 'Inside the Black Box' by the Assessment Reform Group (cited Black et al 2003) was the beginning of further research with, or by, teachers in classrooms, funded by the Nuffield Foundation. This research, and some of the other projects that have followed it, did not always test specific hypothesises but encouraged teachers to develop their own professional practice by trying out ideas and developing new ones in the Action Research genre.

Both Stiggins (2005) and The 'Learning How to Learn' Project funded by the Economic and Social Research Council's Teaching and Learning Research Programme (2001 – 2005) (cited in James, Black, McCormick, Pedder and Wiliam 2006) showed that there was a positive effect on standards through the use of formative assessment in the classroom.

With the publication of the Key Stage 3 National Strategy for 11 to14 year olds (2001 onwards) and the Primary National Strategy for 5 to 11 year olds (2003), which both focused on English and Maths teaching, the term 'Assessment for Learning' became more widely used within schools. The 'Assessment for Learning' Strategy (2008) published by the Department for Children, Schools

and Families (DCSF) (renamed from DFE in the late 1990s and subsequently again renamed DFE in 2011) in 2008 moved in the direction of ensuring a version of ‘Assessment for Learning’ would be implemented in every school within three years.

The Strategy focused on teachers carrying out assessments alongside classwork to inform planning, but without any attention to the fundamental changes needed to work in a truly formative way with pupils to improve learning. The document finished with a self-evaluation schedule that pointed towards the fact that if school leaders could ‘put a tick’ against all the items in the checklist then they would have successful ‘Assessment for Learning’ in the school. However as Wiliam says:

> “there’s no doubt in my mind that the Government’s implementation of assessment for learning left a lot to be desired.”
>
> (Wiliam cited in Goodwin 2008, p.4)

As the ‘Assessment for Learning’ Strategy began to be used in Primary Schools it became clear that metacognition was not widely recognised, or even widely understood, within the Primary sector. ‘Assessment for Learning’ activities did not appear to have their roots in an understanding of children’s thinking about their own learning, and how that understanding could be used to improve both academic and other skills.

Whilst the current focus on formative assessment is within Key Stages 1 to 4 (ages 5 to 16), and research by practitioners and academics has taken place for children in these age groups, there has been less attention on the development of 'learning how to learn' in the Foundation Stage (ages 3 to 5). Research within this Stage includes the Cambridgeshire Independent Learning in the Foundation Stage project (Anderson, Coltman, Page and Whitebread 2003) which was undertaken by a team at the University of Cambridge and a team of Foundation Stage practitioners in Cambridgeshire over two years. This project demonstrated that Foundation Stage children are beginning to be aware of their own learning and to see themselves positively as learners. Other research has been carried out by Shirley Clarke, an educational consultant and associate of the University of London, who worked with a number of teachers in different local authorities who were doing Action Research. Her work focused on how to develop formative assessment within the Early Years. Whilst not directly addressing metacognition as a concept, the learning teams she set up documented the development of formative assessment within Foundation Stage Two (4 to 5 years old). It is clear from the practical examples given on her website (http://www.shirleyclarke-education.org/[24 April 2015]) that although Early Years practice lends itself to formative assessment, there is little research evidence as to whether it makes a difference to the achievement of such young children.

The development of metacognition within Primary Schools has also been documented by Shirley Larkin (2010). Her work using the 'Cognitive Acceleration through Science Education at Key Stage 1' (CASE@KS1) project

was significant in developing the idea that metacognitive processing could develop in children as young as five-years-old if the right conditions were provided.

A headline search of the Education Resources Information Center (ERIC) database for any publications in Journals or published Reports in the last 10 years linked to metacognition and the Foundation Stage and metacognition and the Primary School shows, 53 journal articles and reports in the last 10 years but only five linked to the Early Years (ages 3-5). This is an age group where there has been less interest over time and there is still much to discover.

1.2 The Background of the Study

1.2.1 Early Interest

As an Early Years teacher, and now Headteacher of a large Primary School (ages 3 to 11), I have always been interested in how children learn. The development of children's understanding of learning in the first years of education became a focus when I took part in some Action Research funded by our local authority with Shirley Clarke in the mid-2000s. The focus was very much on the development of 'Assessment for Learning' which, with the Government's Strategy coming to the fore in 2008, was increasingly under scrutiny in the Primary classroom. Unfortunately, the Strategy merely led to a set of day-to-day activities and checklists used by teachers, often without the background understanding of how such activities would support children's learning. I had direct experience of this lack of understanding at senior levels when an OFSTED inspector told me she did not see any point in 'Assessment

for Learning' or in teaching children to 'learn how to learn' because, in her view, it did not make any difference to academic outcomes. Her disparaging view might have been formed as a result of observing teachers in different schools using activities termed 'Assessment for Learning' but without the teachers having an understanding of why, and how, such activities needed to be delivered in order for children's understanding to develop and, in turn, for improved progress to be seen.

However, the Action Research Project raised some interesting questions about why children found some of the 'Assessment for Learning' activities more useful than others. Some activities clearly helped them progress whilst others did not. So how could teachers really help the children they worked with develop the skills that would make them better learners? An interest in the research surrounding metacognition was a natural place to start to consider questions such as:

> Is there a link between a particular stage of the child's development and the development of particular aspects of metacognition?

> What do teachers need to be aware of in order to maximise the potential of particular 'Assessment for Learning' activities?

1.2.2 Exploration in the Academic Year 2012-13

The developmental nature of metacognition has been considered by several researchers (this development is explored fully in Chapter Two). Garner and

Alexander (1989) made the point that children do not always have the language to explain what they understand. This leads to the conclusion that, as observers, we have to interpret what we see. Once children are able to express what they know about their learning adults working with them can scaffold what they need in order to develop the children's skills further. Even if children have the language to express themselves clearly, do they actually know what *learn* means?

I considered the experiment of Esbensen, Taylor and Stoess (1997) whose research looked at children learning facts and behaviours. This experiment explored how young children (aged four and five) viewed learning something new and whether they could subsequently report that they had indeed learnt something new. They were taught two new facts and two new behaviours. One fact and one behaviour were real and the others invented for the purposes of the experiment. Once the children had demonstrated mastery of this new information, questions were asked about whether they had known the information for a short time or a long time. Within their experiment they reported the children had more understanding that they had learnt a new behaviour rather than they had learnt a new fact.

In order to explore this further I extended the experiment to find out what would happen if the children were asked some time after the experiment (six weeks) when they had learned something. I followed the example and taught the children a new behaviour, 'to dwib'. Dwibbing was a sequence of movements repeated over and over again. When asked the same day the vast majority of

children reported that I had taught them to dwib, but six weeks later when asked, only one child in the Foundation Stage Two (FS2) class remembered that I had taught them ‘to dwib’; the other children stated they had always known how to do it or that they had learned when they were a baby. I repeated the experiment in a Year 1 class (5 and 6 Year olds). In this case approximately half the children could tell me that I had taught them how to dwib. This was finally repeated with a Year 5 (9 and 10 year old group) and in this case after the six week period, every child, except one, could explain they had learnt this skill, having been taught it by me.

This suggests that in terms of child development it seems probable that the younger the child, the less likely they are able to comprehend learning as something that happens to them on a daily basis. This raises the question as to whether this is due to a lack of understanding of the concept, a lack of vocabulary to express it, a typical understanding by four-year-olds that they are invincible and have always known everything or simply that, once learned, the context fades and is forgotten, only what was learned remains, not how it was learnt. This highlighted for me how little we know of young children’s thinking about learning. In particular the context in which they perceive learning to take place. Consequently, I decided to explore how the children viewed both what they did in the classroom and how the adults’ language and positioning impacted on their view of what happens in their classroom.

1.3 The Rationale for this Research

This project focuses on the Early Years (the Foundation Stage in English Primary Schools for children aged 3 to 5). It considers the development of the concept of learning in children of this age and what has an impact on it. By considering measures of cognitive development it considers whether there is a direct, or indirect link, between particular cognitive development and the use of *learn* as a concept. It then considers whether the language adults use within the school environment has an impact on whether the children use terms such as *learn, play, work* and *do* when describing their classroom activities. Other research including Anderson et al (2003) and Larkin (2010) has focused on whether young children have the seeds of these concepts and the research has shown that they do.

This research was planned to establish whether there are common factors in children who use the language of *learn*. In essence what makes the difference? Is it related to the child's age or stage of cognitive development, or do other factors, for example the language or actions of the adults in their classroom, make a difference? Additionally, where the adults positioned themselves within the classroom and where in the classroom the children believed learning took place, were considered. If these factors which contribute to the context of the learning make a difference to the children's understanding of learning, then they could be used to improve the practice of both Teachers and Teaching Assistants within the classroom.

1.4 The Setting for the Study

The project took place in the large English Primary School where I am Headteacher. This allowed access to a large Foundation Stage One Class (3 and 4 year olds) and three parallel classes of Foundation Stage Two children (4 and 5 year olds). No school is ever truly representative of the population as a whole and this is certainly true here. The school serves a population in a town in the north of England. The school's formal catchment area includes a large area of local authority (social) housing and an area of individual privately owned houses. Although the area in which the school is situated is not deprived in the way that the area of an inner city school might be, it is nevertheless recognised as being in the bottom quartile according to the English National Income Deprivation Affecting Children Index (IDACI). A fifth of the school pupils are in receipt of Pupil Premium Funding. This is additional funding given by Government to schools to help boost the performance of children from more deprived backgrounds (defined as those children who are, or have been, entitled to Free School Meals in the previous six years). OFSTED (the English School's inspection body) have recognised that, on average, children entering our school have below the expected developmental levels for their age, particularly as a result of poor speech and language.

In England teachers working in Primary Schools, including Foundation Stage One (FS1) school based provision, must be qualified to at least Bachelor Degree level. Additionally, in the Foundation Stage classes at the school two of the teachers have Masters Degrees in Education. Furthermore school policy is that Classroom Teaching Assistants must hold at least a Level 2 qualification

(on the English National Qualifications Framework) in a relevant subject, for example Childcare and Education, although some are educated to a much higher level for example they hold a diploma or a degree.

1.5 In Conclusion

This Chapter has introduced the broad direction of the study, the context of the research and the personal motivations behind it. The expansion of the field of 'Assessment for Learning' in recent years and my personal interest in how children learn has been explained. The parameters for the research have been outlined. These include how an understanding of the development of metacognition in the Early Years, might help teachers focus on the best way to support young children in the development of their understanding of 'learning to learn' and, ultimately make better academic progress. In addition, the idea that the way each individual teacher works, the learning context, can both have an impact on both, metacognitive development and, on the language the children have available to talk about their learning, has been introduced.

1.6 The Research Question

The Research Question this thesis addresses is 'Which factors contribute to a young child's ability to learn how to learn?'

It is addressed through the development of four strands of research considering; the use of the word *learn* by the children, where the children believe *learning* takes place, whether the children have an understanding of the

concept of *learning* and finally whether or not knowing the term *learn* shows metacognitive understanding.

The questions the different strands seek to answer are:

Do FS2 children understand the concept of *learn* and can they verbalise it?

Is the cognitive development level of the children a factor in this understanding?

Are the language and actions of the teacher a factor in this understanding?

Do children demonstrate an understanding of *learn* by applying metacognitive skills in particular situations?

1.7 Overview of the Study

The following overview lays out how the thesis is structured.

This Chapter has given the background, rationale and context for the study.

Chapter Two focuses on the location of the research within the Literature and it considers both the development of research surrounding metacognition and the literature that relates specifically to Early Years in Primary School.

Chapter Three explains the research methods, the reason for the particular methods used and how the data was analysed.

Chapters Four to Six set out the results of the first three strands of the research and these are brought together and discussed in Chapter Seven.

The fourth and final strand of research is described and discussed in Chapter Eight.

Chapter Nine draws the study together and considers the links between this and other research.

Finally, Chapter Ten considers the implications for future practice.

Chapter 2

Review of Literature

2.1 Introduction

Slavin (1991) defines metacognition as 'knowing about knowing' or 'a knowledge about one's own learning or knowing how to learn'.

The field of 'Learning how to Learn' has, in recent years, become an area of interest in Primary Education in the United Kingdom. Beginning with Black and Wiliam (1998) there has been a move toward incorporating elements of metacognition within mainstream educational thinking. In 2000 the 'Learning to Learn' Project was set up by the Campaign for Learning (http://www.campaign-for-learning.org.uk/cfl/learninginschools/projects/learningtolearn/index.asp [1 February 2015]) which involved action research in a number of Primary and Secondary schools. The project continued for the next decade looked at many aspects of children's learning to learn skills, including metacognition, thinking skills, self-regulation, self-efficacy and self-esteem.

From 2005 there has been an increased focus on Assessment for Learning by OFSTED, and it formed an important part of the National Strategies training package. In 2008 they published a report entitled 'Assessment for Learning: The impact of National Strategy Support'. Whilst acknowledging their ten principles of Assessment for Learning, the report focused specifically on the development of these skills in the areas of English and Maths and the impact on achievement in these areas alone. However, in the way it was supposed to have been applied there was, and still is, a danger that 'Learning how to Learn'

manifests itself as an activity in its own right, or at the very least an activity-driven procedure for teachers, with little or no understanding of communicating its importance and how it can help with children's understanding of themselves as learners. This was recognised by Wall (2012) when describing how the Learning to Learn project had changed over time from a toolkit of ideas, in perhaps a similar way to the OFSTED ten principles for Assessment for Learning, to focus on what classroom communities need;

> "A L2L approach provides all learners with opportunities and tools for reflective and strategic thinking that generate talk and collaboration."
>
> (Wall, 2012, p.285.)

One of the findings from the project was that metacognitive skills need to be practiced and embedded. They should not form a toolkit for teachers but become part of a holistic and embedded approach.

The wider context of metacognition however, has not been widely acknowledged in the day-to-day life of Primary Schools and specifically, even in the area of Assessment for Learning, in the Early Years of education (ages three to five). This review of literature provides a context for this study ranging from the wider focus on metacognition, to the specifics of Early Years and how both the children's understanding of their own learning and the impact of the teachers' language and actions might impact upon that understanding.

In the following sections the literature relating to metacognition is examined with a focus on the development of metacognition as a concept, in particular considering differing opinions as to when metacognition can be first observed, and then developed, in children. It also considers the relationship with 'self-regulation' and 'theory-of-mind' and the current research climate.

2.2 Metacognition

Flavell developed the term metacognition in the early 1970s. It was based on the term 'metamemory', which had previously been conceived by him. Flavell (1979) defined two strands of metacognition: Metacognitive Knowledge and Metacognitive Experience. He subsequently divided Metacognitive Knowledge into person variables, task variables and strategy variables; each of which interact to influence our own thinking. He describes Metacognitive Experiences as "conscious experiences that are cognitive and affective" (cited in Weinert, 1987, p.24). In his definition Flavell (1979) describes how Metacognitive Knowledge is built up from Metacognitive Experiences. Consideration of whether these need to be conscious or not is discussed below.

Flavell (1979) states that Metacognitive Knowledge can be obtained in the same way as any other body of knowledge is acquired. He believes that Metacognitive Knowledge is important in the area of teaching people how to study. Metacognitive Knowledge may be part of a conscious strategy, a deliberate conscious memory search, or, more commonly, activated unintentionally and automatically by retrieval clues in a task situation. He describes this knowledge as being built from a range of Metacognitive

Experiences, which must be worked through and practised in order to develop Metacognitive Knowledge. His belief is that by developing Metacognitive Knowledge children can become better learners by using cognitive monitoring, which could be specifically taught, and in time make wise life decisions, as well as progress in formal education settings.

> “I believe that metacognitive knowledge can have a number of concrete and important effects on the cognitive enterprises of children and adults. It can lead you to select, evaluate, revise and abandon cognitive tasks, goals and strategies in the light of their relationships with one another and with your own abilities and interests with respect to that enterprise.”
>
> (Flavell, 1979, p.908)

Flavell (1979) believes Metacognitive Experiences occur in situations requiring careful, highly conscious thinking, for example in a problem-solving task. These experiences may manifest themselves as either remembering a previously learnt strategy from already stored knowledge, or they can be more emotional, for instance a feeling that you are stuck on part of a problem. They can affect the Metacognitive Knowledge base by adding to it, deleting from it or revising it. Flavell describes this as being able to observe relationships, goals, experiences and outcomes and assimilate these to your existing Metacognitive Knowledge and make changes to your Knowledge in the light of new experiences. He argues that Metacognitive Experiences must be worked through and children should be provided with opportunities to do this in order to improve their Metacognitive Knowledge base.

He also states that Metacognitive Experiences can activate strategies, both those that are cognitive and those that are metacognitive:

> "Cognitive strategies are invoked to make cognitive progress, metacognitive strategies to monitor it."
>
> (Flavell, 1979, p.909)

In terms of how this is used within day to day learning Flavell (1979) uses an example of exam preparation: knowing you need to reread a chapter to improve knowledge (a cognitive strategy), but you wonder (a metacognitive experience) whether you know enough so you ask yourself questions about the chapter noting how well you have done (a metacognitive strategy).

Moseley, Baumfield, Elliott, Gregson, Higgins, Miller and Newton (cited in Wall 2008) also distinguish between the two saying that individuals demonstrating cognitive processes are easier to observe, for example, when they are gathering information, organising ideas or making systematic enquiries. Metacognition, however, is seen in reflective and strategic thinking where the cognitive skills children have already developed are applied.

Flavell (1979) believes that whilst elementary school children can distinguish between different feelings about tasks such as puzzlement, not understanding or confusion, they do not know what they should do next. He therefore advocates creating building blocks for skills that can be taught in order to improve metacognition. He suggests that educators wanting to develop

metacognition should focus on exploring three things. Firstly, cognitive monitoring, secondly, monitoring comprehension and finally, monitoring cognition in communication and other social settings.

In terms of cognitive monitoring, described by Flavell (1979) as “metacognitive knowledge, metacognitive experiences, goals (or tasks) and actions (or strategies)” (p.906), he comments that there is far too little cognitive monitoring taking place, particularly for children;

> “For example, I find it hard to believe that children who do more cognitive monitoring would not learn better both in and out of school than children who do less.”
>
> (Flavell, 1979, p.910)

Secondly, Flavell considers Brown (cited in Flavell 1979) and the work that had been done with children with learning difficulties. Children who had been taught a specific strategy, assessing and checking their readiness to recall without error by rote a list of unrelated words as a test readiness exercise, when faced with the same task a year later could use the same strategy and in some cases the children proved able to use it with modifications. Flavell’s third suggestion for further investigation is teaching children to monitor their cognition in communication and social settings, by considering a problem and determining how much you believe it or do what it says to do. This, he suggests, might have an impact in real life situations in later life particularly in making sensible life

choices when there are adverse persuasive factors for example moving taking drugs, quitting school or committing criminal acts.

> "It is at least conceivable that the ideas currently brewing in this area could someday be parlayed into a method of teaching children (and adults) to make wise and thoughtful life decisions as well as to comprehend and learn better in formal education settings."
>
> (Flavell, 1979, p.910)

Since Flavell first defined metacognition a number of different theories have emerged concerning how early in life metacognition develops in children. These have ranged from Griffith and Ruan (2005) who strongly believe that metacognition only develops in later childhood, to the work of Larkin (2006), Whitebread, Bingham, Grau, Pasternak and Sangster (2007) and Wall (2008) who all state that children show elements of metacognition as early as the age of four. Whitebread et al's (2007) criticism of those researchers, including Flavell, who believe that metacognition develops between eight and ten years old, is based on the fact that many of the early studies were either laboratory based or self-report studies. Whitebread et al (2007) argue that studies into self-reporting in young children show the pitfalls of using this method, including children reporting what they think adults want to hear, or not having sufficiently developed language to verbalise their thoughts or actions. Whitebread et al (2007) also argue that it is well documented that the learning of young children is influenced by the social and other contextual factors in which it is based.

Laboratory tests therefore cannot replicate what can be observed in more naturalistic settings.

During the 1980s and 1990s Flavell's work became the starting point for more detailed theoretical models of metacognition. Research was carried out into different aspects of metacognition, with different emphases on the mechanisms and processes associated with it. Research into Flavell's concept of Metacognitive Knowledge resulted in the development of three areas: declarative knowledge, procedural knowledge and conditional knowledge (Schraw and Moshman 1995, Schraw 1998, Georghiades 2004, Larkin 2010). Schraw (1998) summarised these three areas: declarative knowledge as knowing 'about' things, procedural knowledge as knowing 'how' to do things and conditional knowledge as knowing the 'why' and 'when' aspects of cognition.

Central to Flavell's model of metacognition is the understanding that it is made up of two parts: knowledge about cognition and monitoring of cognition. This is standard to many models of understanding. Whilst some researchers have remained fairly constant others, for example Schraw and Moshman (1995), Kuhn (cited in Larkin 2010) and Schraw, Crippen and Hartley (cited in Lai 2011) focus on particular aspects of these strands or develop slightly different views. A review of literature surrounding metacognition by Lai (2011), describes various frameworks for categorising cognitive knowledge. The analysis she makes uses Flavell's two aspects of metacognition, but further subdivides each section and links it to the work of subsequent researchers. She describes these as 'knowledge of oneself as a learner', 'awareness and management of

cognition', 'knowledge about why and when to use a strategy', 'identification and selection of appropriate strategies', 'attending to and being aware of comprehension and task performance' and 'assessing processes and products of one's learning and revising learning goals' (p.7). She makes a detailed analysis of the different aspects of research into these areas. She draws the following conclusion that:

> "Insights experienced while monitoring and regulating cognition play a role in the development and refinement of metacognitive knowledge. In turn, cognitive knowledge appears to facilitate the ability to regulate cognition. The two are empirically related and may be integrated in the form of metacognitive theories, which are formal or informal frameworks for representing and organizing beliefs about knowledge."
>
> (Lai, 2011, p.33)

Different theoretical models for describing metacognition have developed over time. Borkowski (1996) considers the link between motivation and self-esteem in the development of successful learners. His model, which includes reference to self-beliefs, self-worth as well as personal motivation, shows the link between skills that can be taught to aid successful learning and self-esteem.

There is a connection between Borkowski's model and the 'affective aspect' of metacognition which focuses on how feelings and emotions relate to thinking and how tasks are approached. Efklides and Petkaki (2005) undertook work considering the link between metacognitive experiences and mood, which can

lead to feelings of difficulty when completing a task. However, this may not be a problem, as feelings of difficulty can result in higher level thinking and an investment in more effort. They comment that teachers can use the creation of moods, both positive and negative, to good effect through instructions and feedback, either to get children interested or to be aware of task demands. However, too much positive or negative mood can have undesired effects, for example too positive leads to over-optimism and too negative to self-criticism and lower self-confidence.

A further model comes from the social psychology research. The work of Jost, Kruglanski and Nelson (1998) takes the view that metacognitive processes are in evidence when people make social judgements and are necessary for successful communication. They also note that these metacognitive judgements may be tailored to other particular people who are present. This sociological aspect of metacognition is also considered by Moseley, Baumfield, Elliott, Gregson, Higgins, Miller and Newton (2005) when considering frameworks for thinking. They comment that it is

> "……worth looking for features of thinking that recur across contexts. Identifying such similarities or regularities may have benefits for the educator by enabling teaching to build on different experiences and develop complementary teaching approaches."
>
> (Moseley et al., 2005, p.18)

Moseley et al (2005) also consider ‘frameworks of thinking’ that grew from the philosophical perspective, “learning to know or the development of knowledge.” This work draws on the work of Piaget (cited in Moseley et al 2005) particularly reflective thinking, productive thinking, building understanding and information gathering. These frameworks tend to consider the development of ‘thinking skills’ which can be used, or applied, across different contexts. Ashman and Conway (cited in Moseley et al, 2005) describe six types of skills; metacognition, critical thinking, creative thinking, cognitive processes, core thinking skills and understanding the role of content knowledge. However, there are some researchers, including McPeck (cited in Moseley et al 2005), who state that thinking is specific to the context in which it takes place. This position however is rebuffed when considering the work of Smith (cited in Moseley et al., 2005)

> “…this seems too extreme a position……It is not clear that it is only more subject content knowledge than an expert thinker needs. It seems likely that some tools in the critical thinking arsenal may well be useful across academic domains and beyond…”
>
> (Moseley et al., 2005, p.21)

The work of Whitebread et al (2007) in the Cambridge Independent Learning Project (C.Ind.Le) has been one of the biggest projects to consider the development of aspects of metacognition in three to five year olds. The two-year project involved observing children in naturalistic settings, in fact in 32 Nursery and Reception Classes, and then analysing the observations for

evidence of metacognitive development. Evidence was collected, using video, by the educators during activities that;

> "……were constructed to be "meaningful" for the children and in other ways most likely to facilitate children's articulation of their metacognitive knowledge and self-regulation of their performance."
>
> (Whitebread et al., 2007, p.437)

The events were analysed using an analytical model of cognitive self-regulation developed by one of the co-authors Pino Pasternak (cited in Whitebread et al, 2007) and this itself was further developed during the project. They focus on a model of metacognition involving three areas; Metacognitive Knowledge as described by Flavell (1979) (see above), Metacognitive Regulation (the cognitive processes taking place during ongoing activities, for example, planning and evaluation as described by Brown (cited in Whitebread et al 2007, p.438) and Emotional and Motivational Regulation (the ongoing monitoring and control of emotions and motivational states during learning tasks) as described by Boekaerts, Corno and Zimmerman (cited in Whitebread et al 2007, p.438).

The analysis of the areas of metacognition they observed in these children focussed on when aspects of metacognitive development could be observed and whether it made a difference who was involved. The results were coded for children demonstrating aspects of metacognition. A record was made of the type of groups the children were in when these aspects were observed. These included, children working as individuals, in pairs or groups and when adults

were involved and when they were not. Metacognitive Knowledge was demonstrated most frequently when the children were in groups or individually and at a slightly higher frequency when adults were involved. Metacognitive Regulation happened most with pairs or groups of children, rather than when working individually, but dropped when adults become involved. There was a similar picture for Emotional and Motivational Regulation.

Aspects of Metacognitive Knowledge were seen to be more common in activities such as planning, peer tutoring, group work and reviewing learning. But most metacognitive events were coded in the category of Metacognitive Regulation, particularly in peer tutoring or collaborative situations with no adults present.

The model they developed shows that both metacognitive and self-regulatory behaviours are supported and facilitated in peer-assisted learning contexts, particularly in small groups with no adult support or supervision. Activities to help develop these behaviours can be formally organised, and might involve joint problem solving, playing a game and imaginative play, they can also happen informally.

Their conclusions were that three to five year olds in early education do indeed show evidence of emerging Metacognitive Knowledge, Metacognitive Regulation and Emotional and Motivational Regulation (Whitebread et al 2007). One of the later analyses also confirmed that a considerable proportion of these areas can be evidenced non-verbally (Whitebread and Coltman 2010).

Whitebread and Coltman (2010) focus on the impact of context on the development of metacognitive behaviours and its implications for pedagogy.

> "There is now a considerable body of evidence to support the view that children at all levels of ability are able to benefit from explicit instruction in metacognition and self-regulation, including within the domain of mathematics where the encouragement of young children to articulate strategies is a key endeavour…….. These studies also suggest that a series of features of the instructional framework and setting are likely to increase the effectiveness of the intervention."
>
> (Whitebread and Coltman, 2010, p.164.)

This indication that the level of cognitive development is not necessarily a factor in being able to learn metacognitive behaviours is also important as it means that metacognition can be developed in young children. In this case the indication that strategies can be taught is important, whether that is through direct teaching or, as suggested by Whitebread et al (2007), by the provision of specific activities and opportunities. Indeed they state that the progress children make can be significantly influenced by particular pedagogical practices. Whitebread and Coltman (2010) list the following such practices: providing contingent emotional support, supporting children to exercise their autonomy and feelings of control, to set their own challenges and develop a positive disposition towards those which are cognitive, and, most importantly, to help and support children in their development of the articulation of their own knowledge and thinking. They suggest that it is this final aspect which needs

most development within the classroom as it would offer value to both children and educators. They state that in order to do this, teachers need to encourage and support young children in articulating their thinking as part of classroom practice.

During the 30 years of research which have followed the initial work about metacognition, and Flavell's suggestion that there could be benefits to education from this area of cognitive development, researchers have identified some positive benefits to developing metacognition with children and young people. These benefits include the development of successful learners (Borkowski 1996), rising self-esteem (Borkowski 1996; Borkowski, Estrada, Milstead and Hale 1989) and academic success. Helping children 'learn how to learn', be reflective about their own learning and to take responsibility for it, is likely to lead to higher, rather than lower, educational achievements (Hendy and Whitebread 2000).

2.3 Self-regulation

The fields of metacognition and self-regulation have run alongside each other and often intertwined since the 1970's. Dignath, Buettner and Langfeldt (2008) write about the distinction:

> "…..especially the distinction between self-regulated learning and metacognitive learning strategies is often a fuzzy one that lacks clarification."
>
> (Dignath et al, 2008, p.103)

There are differing opinions regarding the relationship between self-regulation and metacognition. Some researchers including Larkin (2010) and Winne and Perry in Perry, VandeKamp, Mercer and Nordby (2002) believe that metacognition is a subset of self-regulation and others, including Alexander, Graham and Harris (1998) and Sangster and Whitebread (2011), that there are elements in common between the two, but that they are different.

Zimmerman (2008) gives the following definition of self-regulated learning:

> "Self-regulated learning (SRL) refers to the self-directive processes and self-beliefs that enable learners to transform their mental abilities, such as verbal aptitude, into an academic performance skill, such as writing."
>
> (Zimmerman, 2008, p.166)

In addition, he states that a self-regulated learner will demonstrate personal initiative, perseverance and adaptive skills. They will demonstrate feelings and beliefs as well as metacognitive strategies. This reflects the view of Boekaerts in Dignath et al (2008) who proposes a model of self-regulated learning which sees metacognitive strategies as one very important element of self-regulated learning and Borkowski (1996) who describes self-regulation in terms of being the most developed level of metacognitive activity.

Other self-regulation research demonstrates that there is an emotional and social aspect to self–regulatory behaviour concerned with regulation of cognition, which is not part of the view of metacognition. Alexander et al (1998)

acknowledge the similarities, but also identify some distinct differences. They state that in the field of self-regulation research has not focussed on the aspects of strategic performance central to metacognition, but on aspects such as goal setting, self-speech, self-assessment and self-reinforcement. Whitebread and Pino Pasternack in Sangster and Whitebread (2011) draw on the most recent consensus:

> "In general, however, the emerging consensus among researchers is for the conceptualization of metacognition as the monitoring and regulation of cognition specifically, while self-regulation refers to the monitoring and control of all human mental functions, including emotional, social, and motivational elements."
>
> (Sangster and Whitebread, 2011, p.81)

Consequently, it would appear that whilst opinions differ between researchers as to where the self-regulation and metacognition boundaries fall there is considerable interlinking and that a study of the development of aspects of metacognition cannot be totally separated from the research into self-regulation in young children. As Larkin (2010) says it would be very difficult to become a self-regulated learner without developing metacognitive awareness of self-related to various contextual factors and Sangster and Whitebread (2011) note that:

> "Undoubtedly, the relationship between self-regulated performance, metacognitive competence, and a learner's knowledge is a highly dynamic and multi-dimensional one."
>
> (Sangster and Whitebread, 2011, p.82)

2.4 Theory-of-mind

Linked closely with metacognition is theory-of-mind which refers to one's ability to reflect on oneself. It is concerned with an understanding of beliefs and desires, knowledge, thoughts, intentions and feelings, and is necessary for understanding the social world and our part in it. Larkin considers the work of Carpendale and Chandler (Larkin 2010) and their belief that theory-of-mind may develop in terms of levels of sophistication throughout early development showing a 'copy theory-of-mind' and later developing an 'interpretive theory-of-mind' involving construction of meaning.

Flavell (1999) describes theory-of-mind as the third wave of research about children's knowledge about the mind. The first wave is the Piagetian view of cognitive egocentricity and the second wave was focussed on metacognitive development. Flavell (1999) describes this third area as dominating the field of cognitive development.

Schneider and Lockl (2002) discuss two lines of research evident from the theory-of-mind research of the past 20 years. One theory, which grew directly out of the work on metacognitive development, is assessing children's understanding of mental verbs such as 'knowing' and 'forgetting'. Wellman

(1985) conceptualises young children's developing Metacognitive Knowledge and their understanding of mental verbs as the development of a theory-of-mind. Some theory-of-mind researchers (Flavell, Green, Flavell Harris and Wilde Astington 1995) deem that it is a significant stage in development when children understand important terms such as 'think' and 'know'. Although 'think' can appear in children's language as early as two and a half years old, it is not until three years old that there is an understanding that thinking is an activity that people engage in (Flavell 1999). At this age children realise that thoughts and images are internal, and are not to be confused with physical realities. There is a basic understanding that the mind and brain are necessary for mental action. However, despite this, they are poor at knowing when a person is thinking and what the person may be thinking, or not thinking, about. Flavell et al (1995) give evidence that four years of age is a crucial developmental point for understanding such terms. It is not until age four that children have a grasp of what thinking is:

> "….some sort of integral, mental activity that people engage in that refers to real or imaginary objects or events."
>
> (Flavell et al., 1995, p.78)

The other line of research is that of 'false belief' where a child below the age of four is unable to believe that another person can believe something he knows to be false. Flavell (2004) illustrated this by describing the results of the following false belief task:

> "……children discover that a cookie box actually contains pencils instead of cookies, they are asked what another child who has not looked inside will think the box contains. Younger pre-schoolers say pencils; older ones, with a better understanding of belief, say cookies."
>
> (Flavell, 2004, p.276)

Schneider and Lockl (2002) state that false belief tasks implicitly assess children's understanding of informational access and knowledge, they need to understand people represent the world in their minds. This understanding develops around the age of four. Lockl and Schneider (2007) say this is when children begin to understand knowledge as part of an information processing system and to appreciate and understand what is important for gaining knowledge.

There is a link between the two where Lockl and Schneider (2007) conclude there seems to be a developmental progression from understanding the verbs in terms of overt behaviours, to understanding them as inferred cognitive states. This seems they say to occur with the development of knowledge about the memory process and what influences memory performance. Tasks such as remembering a shopping list at this age may help children acquire metacognitive awareness.

The concept of thinking is important because there is a link between this development and the early stages of metacognitive development (Bartsch and Estes 1996; Larkin 2010). Schneider and Lockl (2002) point to the development

of theory-of-mind research as focussing on the initial knowledge about various mental states. Schneider and Lockl (2002) state that the work on metacognition has been more task focussed, concentrating on strategies for improving performance. They point to an interrelationship between theory-of-mind and metacognition; theory-of-mind must be present if conscious, or deliberate, metacognitive skills are to develop.

Following on from the theory-of-mind work, which demonstrates that there is an age between three and four years old when children begin to develop an understanding of mental state concepts, there is a clear suggestion that this development is necessary in order to provide the foundation for metacognition (Bartsch and Estes 1996; Larkin 2010). Bartsch and Estes (1996) particularly draw attention to the development of metacognitive knowledge, for example “an appreciation of short versus long term memory or the limitations of attention.” (p.298). They claim that having knowledge about concepts of mental states is a prerequisite to thinking about them, their relationships to others and to the world. Therefore, understanding the children’s acquisition of these mental state concepts is necessary for understanding the development of metacognition.

Their research also raises the links between theory-of-mind and social interactions which foster the development of some concepts of cognition, for example that of belief. They suggest that this link may also impact on aspects of metacognitive development and that children may have varied experiences both social and non-social which impact on individual conceptions of metacognition.

2.5 Metacognition in the Early Years

The literature of the last 40 years identifies many different views on metacognition: how it is defined, assessed and how it links to other areas, such as theory-of-mind and what happens to children at different ages. Although research into theory-of-mind is extensive for children in early childhood, research into the development of metacognitive knowledge and skills in children in Early Years is less well developed. In terms of the difference between theory-of-mind and metacognition Larkin (2010) draws a very distinct conclusion; "most children develop a theory of mind quite easily and without direct instruction" (p.31). The implication here being that metacognition needs direct instruction to develop fully. The instruction may come from a variety of sources and may be done knowingly or be unplanned. She states that in pre-school life these sources may be parents, siblings or peers. As every child's pre-school experiences are different, the environments they are in may help or hinder, however unintentionally, the development of metacognitive processes. When discussing the role of parents she says:

> "while young children may display some metacognitive processing such as detecting errors, articulating thinking processes during problem solving is not frequent activity, unless prompted by an adult."
>
> (Larkin, 2010, p.123)

She maintains that in order to facilitate metacognitive experiences children need the opportunities to practice 'effortful thinking' and discuss their solutions with others. This is where the use by parents of careful questioning of children to

elicit a solution, rather than merely telling them in a step by step manner how to solve a problem, can make a difference.

Donaldson (1978) suggested that Piaget had underestimated the ability of young children to reason and that the development of cognition begins at a much earlier age than his experiments stated. Pramling (1988), building on her previous work, considers the development of preschool (three to seven year old) children in Sweden, in developing their thinking about their learning. This particular aspect of metacognition research acknowledges that it had a different focus from other research at this time by emphasising the views of the children. She describes the development of thinking about learning as an aspect of metacognition which is dependent on context and content.

> "Metacognition is to be seen in three steps. We first focus on what the child is thinking about (a content). At the second step we focus on how the child is thinking about the content. Finally at the third, we focus on the child's thinking about his own thinking about the content, which is the metacognitive level."
>
> (Pramling, 1988, p.266)

In her initial work Pramling (1983), quoted in Pramling (1988), found a developmental trend was clearly shown in children's understanding of learning. Most four to seven year olds understand 'learning to do', fewer understand the connection between 'learn and to know about the world' and none show an awareness of 'learning to understand'. Within an Early Years setting both the

context and content are provided by the adults in the setting. The research, conducted over a six-month period, concludes that it is the way the teacher focuses the children's thinking about their learning, and the differences between the way they learn, and the learning of others, which shows clear metacognitive development. The focus for the teacher should be to encourage children to describe how they had learnt specific content. In this project the teacher was successful because she taught content in a metacognitive way rather than teaching metacognitive strategies or simply teaching facts.

Georghiades (2004) considers the development of thinking skills and hence the development of metacognition in young children. He shows that it is not whether young children have the potential to engage in metacognitive activities that is important, but that the important element is finding the right ways to initiate and enhance such activity. Therefore, the focus should be on helping children to interpret metacognitive experiences.

When considering the nature of metacognition and self-regulating abilities, Anderson et al (2003) found that:

> "….research in relation to pedagogy and metacognition is patchy and under-developed. Precisely what kinds of metacognitive abilities may be encouraged by which elements in a teaching program or approach are as yet very largely undelineated."
>
> (Anderson et al., 2003, p.3)

Research by Larkin (2006) with Key Stage One (KS1) children (five to seven years old) focused on the part collaboration with others plays in the development of metacognitive skills and the beginnings of monitoring and controlling thinking. The collaborative approach allowed them to become aware of their own thinking and the thinking of others. Larkin also believes that pupils in her project had the opportunities to practise these skills until they became part of everyday life.

Whitebread et al (2007) found the use of collaboration to enhance metacognition to be important, as it reduces the cognitive processing load and children also externalise and articulate their ideas to others. Their findings seem to indicate that, when adults were working with small groups of children certain aspects of metacognitive development were observed less often. However, the role of the adult can be important in providing the type of activities needed to promote the metacognitive development in the first place.

Whitebread et al (2007) are clearly of the opinion that because young children are sensitive to context:

> "Previous research relying on young children's verbal performance in laboratory contexts has significantly underestimated the metacognitive and self-regulatory abilities of young children."
>
> (Whitebread et al., 2007, p.447)

The research by Whitebread et al (2007), which took place in the naturalistic setting of the classroom, supports the view that learning contexts, which provoke and support metacognitive talk, will be highly beneficial to learning in small groups. Whitebread and Coltman (2010) give an example of children in a group playing a lotto game. The game had been previously taught to one of the children in a group with a teacher, she then taught it to other children demonstrating elements of metacognitive processes drawing on her previous experiences. One of the roles of the adults in such situations is to help the children develop the articulation of their own knowledge and thinking in order to support such metacognitive experiences.

The difficulty of assessing children's metacognition at this early age is considered by a number of researchers. Winne and Perry (in Whitebread, Coltman, Pino Pasternak, Sangster, Grau, Bingham, Almeqdad and Demetriou 2009) strongly promote the use of systematic observation when working with young children. Their views are that it focuses on what children actually do, rather than what they say they recall. Observation allows links to be made between the behaviour seen and the context of the task and perhaps, most importantly, does not rely on the verbal ability of the participant. Nevertheless, observations have to be interpreted. Larkin (2010) concurs with this as observation avoids young children trying to verbalise their thinking. Pramling (in Larkin 2010) also advocates the use of observation as young children quickly become aware of the type of answers expected in other situations and give those answers in order to please the adult. Broadhead (2006) again emphasises that there is very little research focused on young children talking

about their learning. She stated that, in her view, the ability to talk to children about their learning requires observation which should be well structured and clearly focussed.

Anderson et al (2003) consider the assessment of metacognition as part of the C.Ind.Le project that started in 2003. The project initially began with the development of an assessment tool for working in this area, the Checklist of Independent Learning Development 3-5 (CHILD 3-5). Whitebread et al (2009) particularly hoped this checklist would allow classroom teachers to understand the significance of metacognition and self-regulation in the Foundation Stage.

In their work, which used observational study as a method, Whitebread et al 2009) state that the overall rates of metacognitive behaviours observed in the classroom, for example making a judgment about the level of difficulty of cognitive tasks based on pre-established criteria or previous knowledge, support their view that these behaviours are prevalent in children in this age group (three to five years).

> "The combined frequency of verbal and non-verbal indicators of 6.92 behaviours per minute indicates that, given the opportunity, 3–5 year old children are very capable of engaging in metacognitive activity."
>
> (Whitebread et al., 2009, p.74)

Wall and Higgins (2006) and Wall (2008) use 'Pupil Templates' to help assess children's metacognition. The 'Pupil Templates' mediate the pupils thinking

about cognition and metacognition and support them in expressing their learning. The templates, which contain both speech and thought bubbles, were used with children in the Foundation Stage, as well as in Key Stage One and Key Stage Two. The templates were used in group interview situations or individually either with an adult or independently, to help children consider what they were saying about their learning, but also what they were thinking about. In the Foundation Stage pupils needed support from adults to scribe these bubbles and teachers found that a using a set of formalised prompts, in the form of questions, supported the children in completing the template. Wall (2008) uses the findings from both the 'Pupil Templates' and other parts of the 'Learning to Learn' Project, of which they are a part, to confirm that, in her view Foundation Stage Two children display both metacognitive knowledge and metacognitive skillfulness.

With the C.Ind.Le Project there was a focus on gathering the information and recording metacognitive experiences through observations and through the use of a checklist, completed by teachers. These were analysed using a specifically adapted coding model. However, as Shamir, Mevarech and Gida (2009) describe, the methodologies used for collecting information can lead to differing opinions. They compared information about children's metacognition in three different ways through self-reporting without prompting, in individual learning environments using resources and finally in peer-assisted learning environments using resources. They found that self-reporting did not match well with what they could clearly observe children doing, both during individual learning and in the peer-assisted learning environments. Shamir et al (2009)

conclude that children aged three to five should be given opportunities to learn in various settings and that a mix of methods may be needed to collect information about the development of metacognition.

Research into metacognition in Early Years has broadened the debate about the developmental point at which it exists and also the form it may take. Both metacognitive skills, which can be observed, and the way children understand their own learning, can be identified in some children as young as four years old. Between four years old and eight years old children develop and acquire other skills which are perceived as the more traditional view of 'learning to learn', which is well documented (Veenman, Van Hout-Walters and Afflerbach cited in Whitebread, Almeqdad, Bryce, Demetriou, Grau and Sangster 2010) in children in the middle Primary years. These more developed metacognitive behaviours are applied to support learning throughout the later Primary School years.

2.6 Metacognition in the Classroom

The teaching of metacognition, whether through specific skills acquisition programmes or the teaching of such skills across all subject areas, is seen by a number of researchers, including Griffith and Ruan (2005), as being fundamental to helping children develop these skills and thus improve success in the classroom.

Doran and Cameron (1995) report that although, in their view, metacognition originates early in life, it does not develop sufficiently for children to be able to transfer the skills taught in one situation to another, unless they are specifically taught that this is possible. In order to develop such skills successfully teachers need to organise children's learning, and the nature of feedback, to specifically enhance this area.

> "Teaching is not only about the transmission of facts (and never has been). It is also concerned with teaching children how to learn."
>
> (Doran and Cameron, 1995, p.22)

In order for children to learn they need to actively process 'information' rather than receive 'knowledge'. By 1995 there were a number of programmes that were designed to help children's learning, including Instrumental Enrichment, Somerset Thinking Skills and De Bono's work with the Cognitive Research Trust. Teaching learners how to learn in a planned and structured way was seen as something that could happen in school. Doran and Cameron (1995) suggest that all pupils benefit by explicit self-questioning when presented with a given task or problem. Thinking about, and taking control of, their own learning could happen by using a given set of questions both at the beginning and at the end of activities. The researchers suggest that every Reception (also known as FS2) class teacher should encourage young children to plan activities and to monitor their plans in a structured way. The importance of dialogue in a learning situation is also emphasised and Doran and Cameron (1995) suggest that teachers should focus on asking questions which help pupils identify the

successful strategies they are using and encouraging them to develop further strategies to assist themselves in the future.

Paris and Winograd (1990) also advocate the benefit of direct instruction programmes where pupils aged seven to eleven can learn to identify learning goals and learn to use, and apply, skills effectively to reach them. In addition to this pupils are also conscious of the need to develop these skills as part of the curriculum as well as through direct instruction.

Other approaches that could incorporate metacognitive skills into classroom practice include 'scaffolded instruction' of tasks by adults which is based, at least in part, on Vygotsky's Zone of Proximal Development. Socially constructed learning, as defined by Vygotsky, considers the importance of the role of language in learning. Schunk describing the key points in Vygotsky's theory states;

> "Social interactions are critical; knowledge is co-constructed between two or more people."
>
> (Schunk, 2011, p.243)

Vygotsky considered the social environment critical for learning and believed that social interaction transformed learning. One of his key theories is that children working in the Zone of Proximal Development "allowed them to develop greater awareness of themselves, their language, and their role in the world order." (Schunk, 2011, p.244)

The Zone of Proximal Development is where skills, that are too difficult to master by the child on their own, are developed with guidance and encouragement from another knowledgeable person. Hall, Leat, Wall, Higgins and Edwards (2006) give five different roles that might be taken by a more capable peer, or adult, to support learning in this way; getting the child's interest, establishing and maintaining a view of the goals relevant to the task, highlighting features of the task that might be overlooked, demonstrating how to achieve goals and finally helping to control frustration. By developing metacognitive skills in this way the opportunities to share between the peer-tutor, or adult, and the child exactly why people have made different judgements and choices is enhanced and individual learning is extended in a more social and interactive way. Scaffolding is discussed in greater depth at 2.8.1 below.

There is no doubt in the mind of the researchers that metacognitive skills can be developed in children through teaching the specific skills. However, there are differing opinions about the age at which these skills can be taught.

Teaching metacognitive skills, whether through specific programmes or as ways of working by adults within the classroom, can be part of a good Early Years classroom. 'Good Early Years Practice' as described by Siraj-Blatchford, Sylva, Muttock, Gilden and Bell (2002) includes the cognitive interactions of sustained shared thinking, direct teaching and monitoring of activities. They describe settings with excellent practice as those where there is the highest proportion of sustained shared thinking interactions. The interactions can be child initiated or started by the adult.

When considering what has been described above about metacognition in the classroom links can be made with what is described as ‘Good Early Years Practice’ whether that is in terms of direct instruction as described by Paris and Winograd (1990), scaffolding as described by Wood, Bruner and Ross (1976) or through the learning dialogue described by Doran and Cameron (1995).

Baker and Brown (1984) in their work on metacognitive skills and reading say that although self-regulatory mechanisms, including checking, planning, monitoring, testing, revising and evaluating the strategies for learning, are more developed in older children, they can also be used by younger ones, especially in monitoring their own activities on a simple problem. Their view is that learners are more likely to take control of their cognitive endeavours when faced with tasks that are neither too easy, so they don’t bother, or too hard, so they give up. They describe reading as involving metacognitive skills in many areas and as children generally focus on reading skills in the classroom to use elsewhere they conclude that interventions to teach these skills are very worthwhile and that:

> “we can train the cognitive skills for comprehending and studying texts…… This training can be carried out under the pressure of normal classroom settings……Study skills can be trained, and such training can be durable and generalizable.”
>
> (Baker and Brown, 1984, p.387)

2.7 The Language of Learning - Children

A group of researchers, including Whitebread et al (2007) and Larkin (2006; 2010), believe that the beginnings of metacognition are evident from the age of four. However, as Garner and Alexander (1989) point out, it is often the level of language development of such young children that hinders comprehension by others of what they understand. Cavanaugh and Perlmutter (1982) found that even articulate subjects had all kinds of knowledge which they found difficult to verbalise. Larkin (2010) says that children develop an understanding of words such as think, dream, know, guess, imagine and remember by the age of five, but they are not regularly used within their everyday speech.

Research by Bartsch, Horvath and Estes (2003) considers young children's knowledge of the language of learning. Bartsch et al's hypothesis is that young children's everyday use of words gives an insight into their metacognitive development. In Early Years education this changes from what they have learned, to how and when they learned it. By the age of four Bartsch et al (2003) say that children can report what they have learned, although this is more likely to relate to behaviours (how to do something) rather than new knowledge (Esbensen et al 1997; Bartsch et al 2003). Esbensen et al (1997) found children talked about having learnt a new behaviour, 'to zwib', taught to them by an adult, but in contrast they reported afterwards that they had always known newly taught words (in this case the colour ochre), even though they had just learned them.

The research completed by Bartsch et al (2003) considers the use of the word ‘learn’ in conversations with children aged three to five. The conversations with parents were recorded over time at home and then coded for the use of ‘learn’ including the context in which it was used. The research was designed to explore how children understand their learning and how knowledge acquisition changes in the first five or six years of life, with the associated and subsequent implications that has on metacognitive development. They found that the children and their parents talked most often about what was learned and who did the learning, but much less frequently about when, where and how learning occurred. There was also a trend in the data suggesting that the further the child had been through school at this early stage the more the use of learn related to new knowledge over new behaviours learnt. They conclude that developing an understanding of how young children conceive their learning is important for practitioners and researchers in characterising cognitive development. This would have a role in developing more effective educational practices particularly in the areas of when and how children come to comprehend their own learning experiences.

One important aspect of the research by Bartsch et al (2003) is that it did not involve experimental tasks but considered young children’s talk in naturalised situations, in this case in the home. Although, the authors acknowledge that there were methodological shortcomings in the research (the limited number of participants), and that it only produced some limited findings, they suggest that young children focus on who was involved in the learning and that they were able to talk about how and where the learning took place, when given the

opportunity by the adult asking the right questions. Bartsch et al (2003) and Garner and Alexander (1989) all agree that more research is needed into how young children's cognitions can be measured. Problems identified with measuring cognition include young children's lack of verbal fluency, adult-child understanding and the use of particular words. In addition Garner and Alexander (1989) found that young children have difficulty in discussing cognitive events, for example what they were thinking, as opposed to specific events such as what they were doing.

The language of the Early Years classroom also involves the language of activity, whether that is play, work, do or learn. The understanding of these terms can be dependent on the language of the setting, the home or other children's use of the words. When focussing on a young child's concept of learning it should be remembered that:

> "From children's own perspective, play and learning are not always separate in practices during early years."
>
> (Pramling Samuelsson and Carlsson, 2008, p.623)

This statement seems to encompass much of what has been written about play in Early Years and Reception classrooms. Since the early part of the 20th Century, play has been the centre of a debate about how children learn for educators such as Montessori, Froebel and Pestalozzi. Pramling Samuelsson and Carlsson (2008) describe the two concepts as 'play' being child initiated and 'learning' being adult initiated. Their findings show that children's

understanding is mediated by the school culture they find themselves in, and they argue for a new pedagogy that doesn't separate the two concepts, but draws upon their similarities to develop the concept of the 'playinglearning' child.

However, these views are taken from adult observations and interpretations of what they, not the children, see. Keating, Fabian, Jordan, Mavers and Roberts (2000) looked at the children's verbal responses in the classroom. Before the advent of the Early Years Foundation Stage Framework (2008 revised 2012 and 2014) in England, Keating et al (2000) looked at the different views of play in the Reception Classroom and the difficulties practitioners were having with the 'Desirable Learning Outcomes' dictated by the previous curriculum. Within the research Keating et al talked with children about their perceptions. Whilst they did not use the word 'learn' they do differentiate between work and play.

> "Well, I've not done any work today. I don't know why I came to school."
>
> (Keating et al., 2000, p.445)

This research indicates that children do have a view of what constitutes play within a school situation and goes on to highlight the way the adults working at that time with Early Years saw play as an activity separate from learning and as such it was being squeezed by more traditional academic elements of the curriculum. Playing for the children in this research was generally recreational and consisted of such activities as choosing, the home corner, painting, Lego, the writing station, books, the wooden bricks and the sand. From viewpoint of

the adults in the classrooms it was also an organisational tool and in spite of adults appearing to value play in the responses they gave to interview questions the children's view of the value the adults put on play was different. The children comment that if you are 'sent to a table' it is to work and not to play. This implies that the adults' views on the importance of activities, or how they are perceived by the children, influence the children's use of the words.

The use of the language of learning, which became commonplace following the work of Black and Wiliam (1998), is now a feature across the Primary age range. Lodge (2007) working with six and seven year olds shows that they clearly have an understanding of learning, but that this is not exactly the same for each child. Using the medium of drawing the children were asked to depict their classrooms. Their drawings showed that there were some common features, but they were not replicated by all the children. All children appeared however to be able to make a representation which showed that by this age children can understand there is something that can be labelled as learning.

Using photographic stimuli, Howard (2002) looked at the use of playing, learning and working in the classroom from the view of the child. She looked at two separate categories of children's views, whether they were 'learning or not learning' and whether they were 'playing or working'. The research indicated that children could distinguish between the categories and that children between three and six years old have begun to form conceptions of what these terms mean. 'Work' was when a teacher was present, 'learning' was at a table

and not on the floor and ‘play’ was, generally a self-chosen activity. The outcome of her research was that:

> “This study reveals it may be possible to manipulate children’s perceptions of what it is to play, work and learn by appreciating and understanding the way in which they attend to environmental and emotional cues during their daily classroom activities.”
>
> (Howard, 2002, p.500)

The understanding of the adult’s role in relation to Early Years practice impacts on the children’s views both of actual activities, and also on the importance they (the children) place on them.

Wall (2012) argues that it is the articulation of thinking about learning that supports metacognitive development.

> “The emphasis on talk about learning has been shown to support children in developing the vocabulary of learning, increasing their awareness of the process of learning and, as a result, improving metacognitive knowledge and skilfulness …. The research shows that this process is worth the effort.”
>
> (Wall, 2012, p.287)

Wall (2012) shows that the children valued this aspect of learning and the impact of talking about their learning, although they needed to develop a

specific vocabulary to support the discussions. However, there was a feeling that this gave them ownership of their learning.

2.8 The Language of Learning – Adults in the Classroom

The emergence of metacognitive skills observed in Early Years children does not always correlate with the language development of those children because they do not always have the language to verbalise what they understand by learning. The impact of the teachers' language in the classroom must also be considered as a factor in developing the children's ability to verbalise the concepts that they are able to demonstrate.

Gjems (2010) when investigating 'learning to talk and talking to learn' in an Early Years setting states that:

> "In kindergarten children will learn both to listen to language and to use language, but we have few studies of what characterises the qualities of their experiences. While there is ample evidence of the importance of early years to later development, we know relatively little about effective ways to provide all children with the boost in language learning and learning through language."
>
> (Gjems, 2010, p.139)

The research Gjems completed on the use of conversation, to develop concepts through the use of language, shows that conversation, including a range of open-ended questions, is crucially important if children are to develop their

language, including the use of mental verbs such as know, remember and learn. Gjems also found that teachers seldom used mental words in their questions, but when they did the children always communicated that they (the children) were thinking about their answers. She states that questions about beliefs and experiences are important in promoting children's constructions of meanings and their understanding of events in everyday conversations.

Gola (2012) in research on mental verbs and theory-of-mind also reports that the use of these verbs in conversation, whether directly or overheard by the child, has a direct impact on the children's use of such language. Gola suggests that pre-school children therefore need exposure to conversations in which people take the perspectives of others in the introduction to, and understanding of, the mental world.

The work of Larkin (2010) using CASE@KS1 shows that metacognitive activity can also take place with young children, but that the teacher is a catalyst in the process. The teachers' ability to model a language of learning, in order to encourage the children to explore their thinking, and the engagement of the children in planning and evaluating strategies and in thinking about thinking, are part of the reasons behind the success of this project.

Larkin (2010) goes on to state that these metacognitive strategies need to be taught as part of a lesson and must not become a postscript to the lesson.

2.8.1 Scaffolding

Following Vygotsky's focus on the Zone of Proximal Development, Wood, Bruner and Ross (1976) described the support given during activities in the Zone of Proximal Development as scaffolding,

> " a process that enables a child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts."
>
> (Wood et al, 1976, p.90)

This assistance, or scaffolding, may help develop task competence in learners at a greater pace than if they were unassisted. Once a learner grows in confidence it is central to successful scaffolding that children's independence is fostered. Ankrum, Genest and Belcastro (2014) state that when scaffolding is removed it must allow the learner to apply new learning independently.

Hammond and Gibbons (2005) emphasise the importance of the adults' use of words within scaffolding activities, making an overt link with 'learning to learn' and the importance of developing metacognitive skills.

> "It follows then, that the kinds of talk that occur in the classroom are critical in the development of how students 'learn to learn' through language, and ultimately how they learn to think."
>
> (Hammond and Gibbons, 2005, p.15)

They consider the key features of scaffolding in the classroom as ‘extending understanding’ and ‘temporary support’ and that it has ‘macro and micro processes’ within it. ‘Extending understanding’ relates not only to the support given by the teacher, but also to other forms of assistance designed to help learners to work increasingly independently, “to know not only what to think and do, but how to think and do” (p.10). The feature ‘temporary support’ refers to the nature of scaffolding in terms of enabling children to apply learning independently. They note timely support is critical to effective scaffolding. It is therefore crucial that teachers have a good understanding of where their learners are in terms of their individual understanding at the beginning of an activity. In terms of the ‘micro’ (specific task) and ‘macro’ (framework of a planned program) processes Hammond and Gibbons (2005) say that scaffolding also requires a clear focus on the tasks in hand.

> “Scaffolding needs to be thought of in relation to the development of overall programs and curriculums, as well as to the selection and sequencing of tasks and to the specific classroom interactions that are part of those tasks.”
>
> (Hammond and Gibbons, 2005, p.10)

Scaffolding in the classroom can take different forms depending on the situation. Amongst others Gallimore and Tharp, as well as Roehler and Cantlon (both cited in Henderson, Many, Wellborn and Ward (2002)) categorise scaffolding: Roehler and Cantlon (cited in Henderson et al, 2002) use the following categories; offering explanations, inviting participation, verifying and

clarifying student understanding, modelling desired behaviours and inviting students to contribute clues. One feature of these categories, and those suggested by other researchers, is the overwhelming importance of dialogue between both adults and children. Henderson et al (2002) in their own research categorise the aspects of scaffolding into academic, intellectual and emotional foci. Again whilst actions by adults are seen to be important it is the dialogue between adult and child, as well as that which accompanies the actions, which is seen to be important in moving the children's learning forwards in all areas.

Mercer (cited in Hammond and Gibbons 2005) draws a clear distinction between 'help' and 'scaffolding' which clearly demonstrates learners will, through the support offered by scaffolding, be able to apply independently what has been scaffolded in subsequent tasks or problems. Ankrum et al (2014) agree when talking about using scaffolding to help teach young children to learn to read.

> " if we make our thought processes 'visible' to young learners they can more easily apply thinking strategies to their own reading. This is the very definition of exemplary and developmentally appropriate instruction"
>
> (Ankrum et al, 2014, p.45)

Within the context of this research it is scaffolding which verify's and clarify's understanding as well as modelling desired behaviours (Henderson et al, 2002) which emerges most clearly. The following vignette gives a brief example.

Vignette 2.1 Teacher B scaffolding a task with Leon

Leon is making a musical shaker in the Creative Area of Birch Class. He is a child who uses very little spoken language. He has a pot with a base but no top and has filled it with rice which falls out every time he shakes it.

Teacher B works alongside Leon making her own shaker and using a running commentary about the rice falling out and how the shaker will not work. She talks through various suggestions she might try and she encourages him to do what she does and at each stage she stops short of actually doing the task at a point where she has led him to understand through her actions what he needs to do next.

In terms of considering the use of scaffolding in the Early Years some of the initial work of Bruner (1975) was based on interactions between young children and caregivers, where children were supported in their learning by the language and actions of parents. He describes the behaviour of parents, in this case the mother, as trying to control aspects the child is unable to control themselves e.g. distractions and limits to motor skills (holding an object steady) to assist the child to achieve an action but not to complete it for them.

Pentimonti and Justice (2010), when considering the use of 'read-alouds' in the pre-school classroom, acknowledge the importance of the teachers' language strategies and scaffolds in the development of early literacy skills amongst four-year old children. They note that there is little other research on teachers' use of

scaffolds in the pre-school classroom. Their research is, however, limited to the types of scaffolding used by teachers and not the impact scaffolding has on the children.

Some researchers have found that despite the intentional use of scaffolding to support learning it can go wrong. Bliss, Askew and Mcrae (1996) when working with teachers in Key Stage Two found that some teachers who set out to scaffold learning in classroom lessons actually ended up wasting the opportunity. Teachers in this research sometimes bypassed an opportunity because of other foci or had pseudo-interactions with the pupils. Here the adults appeared to be involved in scaffolding an activity but this was illusionary because little or no use was made of the pupils' contributions.

2.8.2 Other Adult Interactions in the Classroom

Carr's research (2011) into conversations between children and adults about learning observes that teachers have to use specific strategies to make the most of these conversations. They can contribute to the children's view of how they learn, but do not always do so. When commenting on the recordings she had made of the teachers she expresses surprise about the number of closed questions teachers used, even commenting that there were a number of open questions that were actually "closed questions in disguise" (p.259). In this research the children revisited 'Learning Stories' which the teacher and children had put together, as a dialogue and pictures, at different times in the classroom. The stories are a semi-permanent reminder for the children. The research shows that the conversations were most successful when the child initiated

them and the adults' responses were minimal, giving encouragement without saying too much, but keeping the conversation going in order to give value to the learning taking place. The successful classrooms were where teachers understood the importance of making time for this.

Kuykendall (1993) clearly acknowledges that the language used by adults in the classroom can impact significantly on the children. Whilst in this case it is prosocial language that is under discussion, the description of a classroom where this is well established clearly demonstrates the importance of the teacher's role in developing a particular range of language. Because the teacher uses the language in everything that takes place in the classroom the children adopt the range of language and behaviours exhibited by the adults.

Lennox (2013) recognises that "Young children's language development is a critical factor in reading and later school success" (p.381). She states that teachers and children need time to engage in sustained thinking, as well as time to develop vocabulary and build conceptual knowledge.

> "If children are to be empowered to use language for thinking and understanding, they need to develop abilities to operate at an inferential level."
>
> (Lennox, 2013, p.386)

This links very powerfully to the early stages of the development of metacognition in children, as it seems to indicate that the language the children

require to vocalise their understanding needs support to be developed fully. This does not happen in all classrooms, although skilled practitioners are able to achieve this.

Dickinson, Hofer, Barnes and Grifenhagen (2014) look more specifically at the development of an academic register of language in a pre-school setting. They believe that the teachers' use of an academic register is varied. Teachers' beliefs and pedagogy in this area shape the academic register which they use within the classroom and the consequent impacts this has upon children's understanding.

The group of adults with whom children spend the most time are those who look after them at home, their parents and carers. Work by Hall, Wall, Higgins, Stephens, Pooley and Welham (2005) from the Learning to Learn project considered the impact of parents in learning to learn. One element that was consistent in the research projects they discuss was the consistent use of the language of learning between home and school. Having a common vocabulary lends itself to encouraging reflection on learning improving confidence and the control of the management of learning. Wall, Hall, Baumfield, Higgins, Rafferty, Remedios, Thomas, Tiplady, Towler and Woolner (2010) report that as a result of Learning to Learn interventions in school children had developed the vocabulary to talk about their school experiences. Parents reported that this also impacted upon the confidence of the children.

The research listed above focuses on the fact that adults who model both the language of learning and metacognitive processes can impact positively on the observed behaviours of children. Children, who can express their thoughts using a range of language linked to learning, are able to demonstrate more clearly their developmental level in relation to emerging metacognitive understanding.

2.9 Additions to the Review of Literature from 2014 Onwards

The field of research into metacognition does not stand still and, over the last two years while this research project was being carried out and written up, further articles and books have been published. It is notable that there has been little focus on children in the Foundation Stage, although there have been some findings in relation to Primary Aged children. This final section includes only those articles and publications which relate directly to impact in the classroom and which are of relevance to those currently teaching in schools. They concentrate on three areas: the development of work around metacognitive knowledge, the development of work around metacognitive skills and whether a metacognitive training programme can make a positive impact on achievement.

Firstly, looking at further work on metacognitive knowledge Haberkorn, Lockl, Pohl, Ebert and Weinert (2014) considered the introduction of a new test which measures the metacognitive knowledge of children in the first years of Elementary School (six to eight years old). The test was found to be reliable.

The findings from the application of the test at the end of Grade 1, and again at the end of Grade 2, suggested that neither the language skills nor the cognitive ability of children were a measure of metacognitive knowledge. Their findings also confirmed those of Pramling (1988) where the younger the child was it was more likely that they demonstrated knowledge about a skill, rather than knowledge about a mental process.

Händel, Lockl, Heydrich, Weinert and Artelt (2014) looked at eleven and twelve year old children with Special Educational Needs (in Learning) and they found that these pupils experienced difficulties in judging the usefulness of presented strategies and struggled to choose between different strategies, which indicated that they lacked metacognitive knowledge.

Duckworth, Gendler and Gross (2014) focussed on the development of self-control in children and found a link between the level of self-control exhibited by children and their level of metacognitive knowledge. They believe that the knowledge and skills that link directly to self-control can be taught.

All three of these research projects about metacognitive knowledge, Haberkorn et al (2014), Händel et al (2014) and Duckworth et al (2015), concluded there were still areas of research into metacognitive knowledge that need to be completed. The three sets of researchers all indicate that this field of research is ongoing.

A second aspect to more recent research has focussed on the development of metacognitive skills. In one of the few projects to focus on early Primary Aged children (five to seven year olds) Bryce, Whitebread and Szűcs (2015) considered the link between metacognitive skills and executive functioning. They conclude that:

> "These findings highlight the crucial role that this approach to learning plays in attainment and confirm that metacognitive skills are worth investigating within this age-range."
>
> (Bryce et al., 2015, p.195)

They suggest that executive functions such as working memory, inhibitory control and task shifting contribute to the children's ability to use metacognitive skills appropriately and therefore this has an impact on their educational achievement. It is important, they conclude, that when considering the development of metacognition in young children, consideration is also given to the child's executive functioning.

The final aspect to more recent research considers the impact of metacognitive training programmes, in this case one to help improve problem solving in eight to twelve year olds. Cornoldi, Carretti, Drusi and Tencati (2015) implemented a training programme using metacognitive components of problem solving in Maths and metacognitive reflection on beliefs about Maths. The training programme was implemented over a number of weeks focussing particularly on strategies that would assist solving problems, rather than specific skill areas of

Maths. Their findings confirm the earlier findings of Cornoldi in Lucangeli, Cornoldi and Tellarini (cited in Cornoldi et al 2015) that this type of training can be effective. The biggest impact was shown with pupils with a weaker performance in Maths at the beginning of the training, but it had an impact on all children and it was still in evidence sometime after the completion of the training.

Work in all three areas, whether confirming findings of earlier research or moving the knowledge base forwards, clearly indicates that the application of metacognitive knowledge and skills can have an impact on achievement in the classroom.

2.10 Summary

The development of metacognition remains an area where there are firmly expressed opinions from those who believe it can be observed in some areas as early as four years old, to those who believe it does not develop until much later in childhood.

The development of both self-regulation and theory-of-mind have been linked with that of metacognition and must be present before metacognitive skills and knowledge can begin to be cultivated, although it is acknowledged that Borkowski (1996) amongst others see metacognition as a high level sub-set of self-regulation skills.

The impact teachers have in shaping the language and concepts of ‘learn’, ‘play’, ‘do’ and ‘work’ is an important part of how children view themselves as learners. The research that has focussed on use of language in the classroom has helped to shape the knowledge as to whether children can express their understanding of these concepts. Where the language is less well developed, it is acknowledged that metacognitive skills may be observed, but without the children having the verbal skills to talk about them; developing metacognitive thinking may take longer.

As far as Early Years is concerned, there is evidence that an awareness by adults of how to work metacognitively with children, and how they use language, can have a significant impact on the development of children’s metacognitive skills. Whilst programmes in school designed to develop these skills may be one aspect of developing metacognition, it would appear that how the adults support the children at their level of developmental progression in everyday classroom activities, is just as important.

The differences of opinion between researchers show there is a need to continue work in this field in order to fully understand the nature of metacognitive experiences for young children and how their use might enhance the learning experience.

2.11 Approach to the Research Project

This study focuses on children in the Early Years. It does not focus on any one particular aspect of metacognition, but on factors that need to be present, in

both children and their classroom environments, if aspects of metacognition are developing.

This research will consider the work of Whitebread et al (2007, 2009) who are clear that metacognition is developing and observable in children aged three to five as opposed to others, including Flavell (1979) and Griffin and Ruan (2005), who argue that it only develops much later.

Initially, work will be done to determine whether these children are able to verbalise or demonstrate an understanding of learning. Considering the work of Bartsch et al (2003) it will look at the use of the word learn in structured conversations with children aged four and five in the school setting. This follows the work of Whitebread et al (2007) who found that naturalistic settings were more conducive than laboratory settings for observing metacognition in this aged child. The conversations will take place using a mediating object for the children to talk to, in line with the ideas proposed by Shamir et al (2009) using individual learning situations with resources. The scale and time available for this research means that this approach, rather than the observational methods advocated by Whitebread et al (2007), is the method of research that will be used.

Subsequently, the study will consider the role and importance of the adults in the classroom in line with the work described by Keating et al (2000), both in the language they use and the importance the children perceive the adults place on activities undertaken in the classroom environment, in order to support learning.

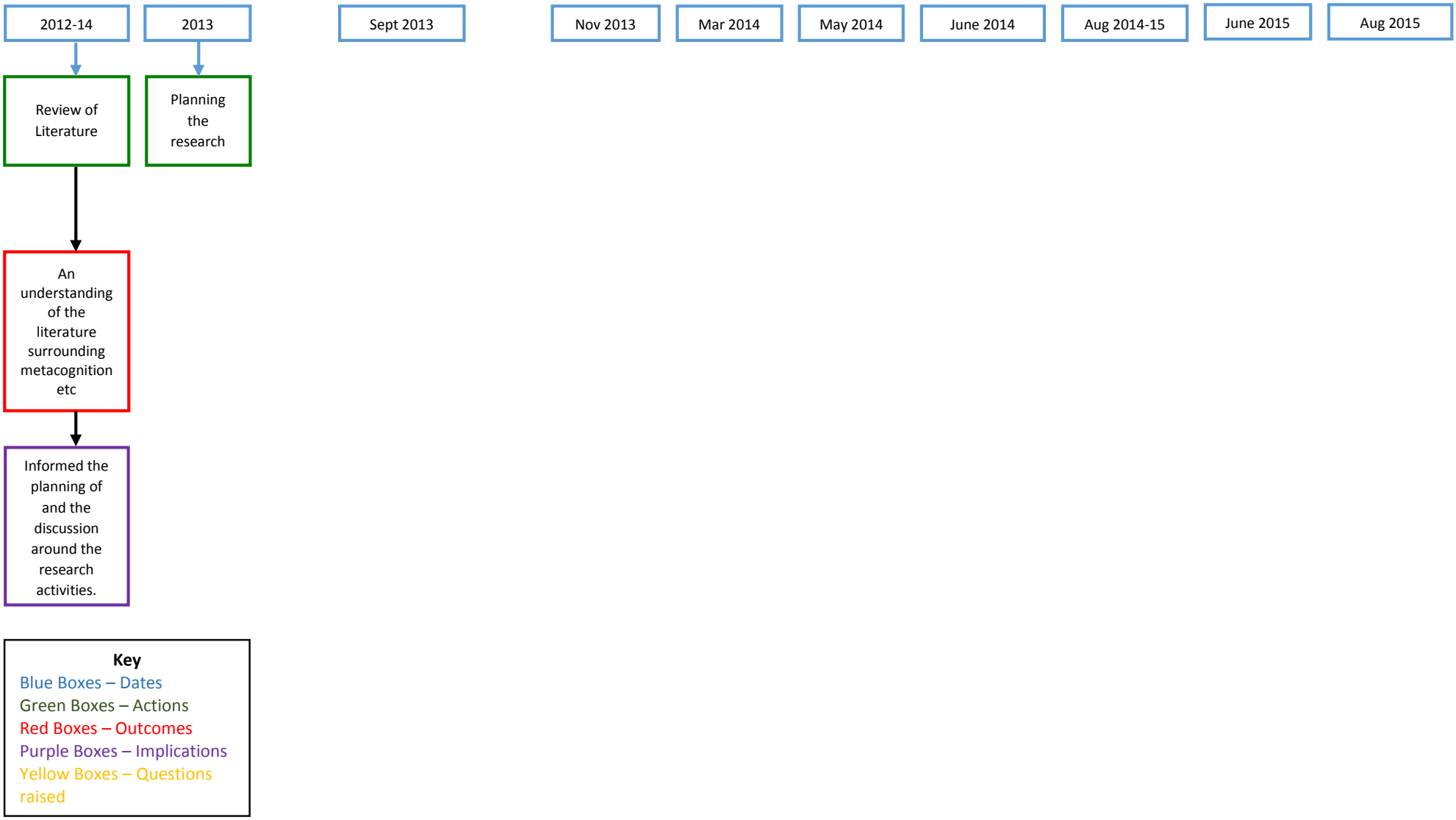
In addition, the work of Whitebread and Coltman (2010) argues that there is much that can be added to classroom practice in order to accelerate both the development of metacognitive skills and academic progress.

The final part of the research will consider whether knowing and understanding the word *learn* shows metacognitive understanding. In line with work on the 'affective aspect' of metacognition (Efklides and Petkaki 2005) work will be undertaken to see whether metacognitive strategies are used when children come up against a problem which may be affected by their feelings, in this case how do they react to 'getting stuck'.

Section 2.12

The Research Journey Part One

Figure 2.1 The Research Journey Part One



Chapter Three

Method

3.1 Introduction

In order to consider the main research question, 'Which factors contribute to a young child's ability to learn how to learn?' there were four subsidiary questions to be answered. The focus for all four questions was the children's view of their own learning experiences. The questions were as follows:

> Do FS2 children understand the concept of *learn* and can they verbalise it?
>
> Is the cognitive development level of the children a factor in this understanding?
>
> Are the language and actions of the teacher a factor in this understanding?
>
> Do children demonstrate an understanding of *learn* by applying metacognitive skills in particular situations?

These questions inform the answer to the main question because they consider aspects of development and classroom experience common to all children which may have an impact on their ability to learn how to learn.

In order to collect the data to answer these questions a number of research activities were conducted in four different Strands of research. In this research a qualitative approach has generally been adopted, as the flexibility of participant observation and the use of pupil interviews with a mediating object was

required. However, aspects of quantitative enquiry are used in terms of data analysis.

The research undertaken for this project is a piece of naturalistic inquiry focussed in one setting. It can be considered as a case study and, although not a piece of Action Research as such, it draws on aspects from this type of enquiry. The issues relating to this type of research are not exclusive. Many issues identified by researchers are common to all studies. Wolcott, cited in Cohen, Manion and Morrison (2000), says specifically of naturalistic researchers that they:

> "…..should address the stages of watching, asking and reviewing, or, as he puts it, experiencing, inquiring and examining."
>
> (cited in Cohen et al 2000, p.140)

As the methods adopted in this study are described and justified in this chapter, specific issues arising from the chosen methods will be discussed.

Strand Four was designed later in the research process and the methods for that strand are described in Section 3.7.4 below.

3.2 Case Study

> "A case study provides context-dependent knowledge and accounts of practice that are drawn together from the voices, actions, interactions and creations of the carriers of practice in a site."
>
> (Miles, 2015, p.311)

Whilst this study did not set out, in the planning stage, to be a case study many of the hallmarks of case study research are evident within the methodology and it can certainly be seen as a study of a particular school community at a particular time.

This case study examines the development of metacognition within Early Years children and it offers its findings as a contribution to the body of knowledge surrounding metacognition within a Primary School. Yin (2009) identified five different approaches to case studies: 'the critical case study', 'the revelatory case study', 'the representative case study', 'the longitudinal case study' and the 'unique case study'. This study is closest to his description of a representative case study because it is likely that the experiences of the children and teachers are similar to, although not identical to, those in other schools. The result of this case study may also be relevant in a number of important ways to them.

Cohen et al describe case studies as a research approach which:

> "Seeks to understand and interpret the world in terms of its actors and consequently may be described as interpretive and subjective."
>
> (Cohen et al, 2000, p. 181)

They also comment that it provides a unique example of 'real people in real situations'.

This describes this research, as it is a piece of naturalistic enquiry about what teachers do in their classrooms on a daily basis, and how children view what goes on around them. The perceptions of the children may lead to changes in practitioner practice over time.

Yin (2009) states that case studies arise:

> "…….out of a desire to understand complex social phenomena. In brief, the case study method, allows investigators to retain the holistic and meaningful characteristics of real life-events – such as ……. school performance….."
>
> (Yin, 2009, p.4)

He also says of case studies that they are not just a form of qualitative research, but that they can be a mix of qualitative and quantitative evidence. Again his description encompasses this study where the data was collected through participant observation and interviews and the analysis of the data was sometimes quantitative and sometimes qualitative. Strake (cited in Hitchcock

and Hughes 1995) however says that it is important to remember that it is the object to be explored that is important and not the methodology used to study it.

Yin (2009) describes different purposes of case studies: they can be exploratory, descriptive or explanatory and mainly focus on ‘how’ and ‘what’ questions. Case studies are preferred when examining contemporary events where relevant behaviours cannot be manipulated and they rely on direct observation and interviewing of people involved in the events.

Hitchcock and Hughes (1995) comment that it is essential, within whatever form of case study, that it is the individuality of the case study which is retained.

Hitchcock and Hughes state,

> “case studies can be of particular value where the research aims to provide practitioners with better or alternative ways of doing things.”
>
> (Hitchcock and Hughes, 1995, p.323)

This research was started with the intention to consider whether a change in practice could improve learning outcomes for children. It was a study where the findings could bring about changes in practices within the school, and possibly in other schools and settings in the longer term.

Yin (2009) considers the types of evidence collection which are important within case studies to include interviews, direct observation and participant

observation and he notes that no method of collecting evidence should have precedence over any other. He states that one principle of data collection within case studies, that using only a single source of evidence, creates problems with verification of data. Studies using multiple methods mean that events or facts can be corroborated by using more than one source of evidence.

When considering issues for and against using case studies Yin (2009) expresses the concerns that there can be a lack of rigour with a consequential lack of systematic procedures and even unintentional bias. Miles (2015) has also considered the traditional limitations of a case study in terms of being limited in the scope of generalisations which can be drawn. Thomas (cited in Miles 2015) disagrees by saying that it is the context dependant knowledge that comes from case studies which contributes and becomes an example from which learning can take place. Hitchcock and Hughes (1995) also consider issues with generalisations from case study research. They conclude that different degrees of generalisation are possible and that such generalisations will also depend on the richness of the data and the context from which generalisations arise.

3.3 The Research Setting

3.3.1 The School Context

The setting for this study was the Foundation Stage of a large suburban Primary School. The school was formed in 2011 by the amalgamation of an Infant and Nursery school and a Junior school, which have been located on the same site since 1953. The number of children on roll has grown steadily over the last

three years. There were, at the time of the study, 540 children on roll accommodated in 19 Classes and a large Nursery (FS1) Class. The school serves a socially mixed area consisting of a very large social housing estate (75% of pupils) and a more affluent area of private housing (25% of pupils). The school ranks in the most deprived quartile for the local authority in terms of the indices of deprivation.

3.3.2 The Classroom Context

The majority of the data was collected using observations and interviews (see section 3.7) in the Foundation Stage Classrooms. The Foundation Stage in England is divided into two groups: Foundation Stage One (FS1) which consists of Nursery One (N1) and Nursery Two (N2) children and Foundation Stage Two (FS2) which consists of the first year of formal school. Children born between September and March join N1 in the term following their third Birthday and continue for four or five terms through N1 and N2. Those born between April and August join N2 in the September after their third birthday and complete three terms. All these children move into the FS2 year group in the September following their fourth Birthday. About two thirds of the FS2 children attended FS1 at the school and one third joined the school at the beginning of FS2 from other Early Years settings.

There was one FS1 Class and children attended for up to 15 hours a week. These hours could be taken as either half or whole days, which meant some children attended 5 half days and others 2 full days and a half day. Depending on the day the FS1 session could have between 26 and 48 children in it with the

appropriate number of staff. The ratio in a school based FS1 unit is 1:13, but there must at least one qualified teacher present in each session and if the number of children present exceeds 39, for any session, a second teacher is required.

There were three FS2 Classes in the school. Each had approximately 25 children and each class had a full time teacher as well a teaching assistant for 15 hours per week. The vast majority of children attended FS2 full time, although two children in the research cohort attended part-time until the January of FS2 (2014). The three classrooms are similar in size and have access to a shared outside area. The staff work closely together meaning that the overall set-up of the rooms is similar, particularly in the set-up of the Areas of Provision: Writing Area, Painting Area, Creative Area, Construction Area, Small World Play, Role Play Area and Computer Area.

The teachers followed similar topics throughout the research period. Each classroom contained a main carpet space large enough for the whole class to sit next to an interactive whiteboard. In each room there was at least one table where an adult could work at a table-top activity with a group of children and a range of Areas of Provision set up by the teachers for either free play or more structured activities.

Children in the Foundation Stage in Primary Schools in England follow the ‘Statutory Framework for the Early Years Foundation Stage’ (2012 revised 2014). This specifies the Areas of Learning and Development that must be

provided to all children between 0 and 5 years old by all Early Years Providers. There are seven ‘Areas of Learning and Development’ and these are assessed in the ‘Foundation Stage Profile’ (2012 revised 2014) at the end of the FS2 year in Primary School. Children who achieve certain criteria are deemed to have reached a ‘Good Level of Development’ which has been determined by the Department for Education as the ‘Expected Level’ for children leaving the Foundation Stage.

3.4 The Participants

3.4.1 The Teachers

The FS2 children involved in this research came from three different FS2 Classes. The FS1 children were from the one FS1 class.

There were two FS1 teachers, one who taught full time and the second whose teaching time increased throughout the year as FS1 numbers increased. The full time teacher was in her fourth year of teaching and the second teacher an experienced teacher with over 20 years experience. She is also the Foundation Stage Leader and the Inclusion Manager for the School. The FS2 teachers were all in the early stages of their teaching careers. Teacher A was a Newly Qualified Teacher, Teacher B had been teaching for three years and Teacher C for two years. Apart from teaching practice placements they had only taught at this school.

3.4.2 The Teaching Assistants

There were eight teaching assistants (TAs) involved with the classes whilst the observations took place. Seven were experienced and one, new to the role, was working as a TA prior to commencing teacher training at the end of the academic year. In FS1 three of the five assistants were qualified teachers working as TAs, another was qualified to Early Years Practitioner Status and the fifth was an experienced Special Needs Assistant. In FS2 one of the assistants was a qualified Nursery Nurse and two had relevant qualifications at Level 2 and Level 3 of the English National Qualifications Framework.

3.4.3 The Children

There were 67 children in the FS2 cohort on roll from September 2013 to July 2014 (the initial period of the research) whose progress can be tracked at this school. Any children joining after the initial observations in September or leaving before data collection in June were discounted from the cohort. In the research cohort 21 children came from Birch Class, 24 from Cypress Class and 22 from Alder Class.

3.4.4 The Sample of Children

3.4.4.1 Strands One to Three

Following the pilot observations (see section 3.7.2 below) and the initial activities, including the trial interviews, the children involved in the pupil interviews during 2013-14, were all selected from FS2. As a piece of small scale research in one school non-probability samples were the most straight-forward to use. In these interviews convenience sampling was used. The sample for the

interviews was approximately 50% of the cohort. I did not choose or influence the choice of children for the interviews but only took children who were not doing a focussed teaching task at the times set aside for the interviews. Therefore as Cohen et al (2000) state:

> "….the parameters of generalizability in this type of sample are negligible."
>
> (Cohen et al., 2000, p.103)

A total of 32 children took part in the interviews from across the three FS2 classes. 14 were boys and 18 girls. This mirrors the year group where there are 7 more girls than boys.

3.4.4.2 Strand Four

The methods used to collect the data for this strand were similar to those used in Strands One to Three. However, in this sample, children from three different year groups, FS2, Year 1 and Year 2 were interviewed. The reason for this was to consider the different responses from children across the Foundation Stage and KS1 cohorts in terms of understanding the age-related development of aspects of metacognition.

Only children who were able to talk appropriately about *learn* as a concept were included in the sample for this strand because the purpose was to assess whether the children demonstrated any elements of metacognitive knowledge. It was felt that to demonstrate this they needed to be able to express an

understanding of the fact they were stuck with learning and had the language to express this. The children from Year 1 were randomly selected from those who had indicated this understanding when they had been interviewed the previous year. In total 19 FS2 children were questioned before six children who understood the concept of *learn* were identified. In Year 2 only seven children had to be asked the questions before six who understood the concept were found.

3.5 Ethics

Approval from the Ethics Committee of Durham University and consent from the parents of the children was obtained before the interviews commenced. The issue of children giving their own permission to take part in research was considered. Belanger and Connelly (2007) cite several research projects which have discussed the use of the 'children's voice' (Lewis & Linsay and Warren cited in Belanger and Connelly, 2007). Children, they believe, should decide what, when or how information should be shared with the researcher. They also talk about helping children understand the process of research so they are aware of what they are being asked to do and why they are being asked to do it. Fine and Sandstrom (in Cohen et al (2000)) agree that children should be told as much as possible depending on their level of understanding but if they are too young, or have developmental special needs, consent should be gained from parents or teachers.

Taking this into account and the fact that the children were aged between three and five and would not be able to understand that the purpose of the interviews

was to gain an understanding of issues relating to metacognition, consent was sought from the parents and carers. Parents were sent a letter (Appendix One) explaining the purpose of the research and were invited to a meeting to find out more. The consent of the teachers and teaching assistants was also sought along with permission of the Governing Body of the School. In addition, if an individual child refused to engage or speak this was taken as withdrawing consent for that particular activity.

Whilst attempts to anonymise the school have been made and none of the children nor teachers have been named, confidentiality was never guaranteed. It is possible that the school could be identified as my status as Headteacher is easily identifiable as it is in the public domain. Anyone who knew the school might be able to identify the group of teachers or children involved however letters, initials and alternative names have been used to anonymise the adults and children as far as possible. The three FS2 classes are referred to as Alder, Birch and Cypress and link with the teachers' names Teacher A, Teacher B and Teacher C. Teacher D was the full time FS1 teacher and Teacher E the part time teacher in FS1.

3.6 The Politics of the Research

The concept of reflexivity is an important one in this research. I was conscious that, as a part of the social world being researched my position as Headteacher could affect the way in which the participants reacted in my presence.
Cohen et al (2000) recognise that researchers are inescapably part of the social world they are observing. The dual role of the researcher has to be

acknowledged as it can have difficulties during the research process and there are conflicting views around this issue.

Hammersley (1993) expresses the view that practitioners can be best placed to understand their own activities as they have access to their own intentions and motives. Whilst in this case I was not directly the children's teacher but the Headteacher, there were obviously intentions for the school in the research in that I wanted to improve outcomes for children. Hammersley cautions that people can be wrong about their motives and he states that maintaining a distance from the activities they observe is important. During the research described in Chapters Four to Six, I was very careful not to share findings with the staff or to pass comment on what was observed in order to keep and maintain some distance.

It is always possible that conflicts of interest could arise particularly in relation to the quality of teaching. Had I seen anything in the quality of teaching that concerned me as Head of the School, for example inadequate lessons, this would have been difficult to manage. In this case I was able to keep the two types of observation separate as issues that might have needed attention did not arise. However, it needs to be acknowledged that this might have been the case.

In addition there is the possibility that the staff might have felt obliged to take part in the research due my role as Headteacher. There was evidence that the school generally welcomed research as two of the Foundation Stage teachers

had themselves undertaken, with the school's permission, higher level degree research over the previous two years. There was an understanding of the benefits that such research could bring for the school community. This would be the third research project involving broadly the same staff and they had welcomed the benefits the previous projects had brought.

One of the issues with the children's interviews and the position of a teacher researcher is that there can be an element of control in an interview between an adult and a child and, of course, the issue that a child might assume there is an answer that the teacher wants to hear. This is discussed further in Section 3.7.4.

3.7 The Research Process

The data for this research was gathered across a period of two years. Year One (2013-14) focussed on data collection for Strands One to Three: whether children used the term *learn,* where the children perceived they *learnt* and whether the children had a concept of the mental verb *learn.* During Year 2 (2014-15) the data was analysed and considered and the final strand, Strand Four, was added to consider whether children demonstrated aspects of metacognition when they *got stuck* in their work.

Before any data collection began I held meetings with the staff who worked in the classes to explain the purpose of the research and the activities that would take place. Because of my position as Headteacher of the school, it was important for the staff that I drew clear distinctions between the observations of

staff which took place as part of the normal monitoring and performance management programmes of the school and the observations that would be part of this Action Research project. Whilst the purpose of the project was explained the exact focus of the observations and of the pupil interviews were not. It was important that there could be no bias in the way either staff acted or prepared children for working with me otherwise the data would have to be excluded. However, staff were reassured that they were to be given a summary of the findings at the end of the project.

The following table gives the timeline for the research activities across the research period.

Table 3.1 Timeline for interviews and observations

Date	Activity	Participants
September 2013	Pilot Observations to introduce Eddie	FS1 and FS2 Classes
September 2013	Observations and analysis relating to staff use of language	Teachers A,B,C,D,E and TAs
September and October 2013	Collection of Baseline data	Teachers A,B,C,D,E and TAs
October 2013	Moderation Meetings	Teachers A,B,C,D,E
October 2013	Trial Interviews	FS2 children
November 2013 – January 2014	Pupil Interviews What Can Eddie do in the Classroom? Is Eddie Playing or Learning?	FS2 Sample
March 2014	Pupil Interviews How will Eddie know when he is ready for a reading book?	FS2 Sample
May 2014	Pupil Interviews Investigate children's understanding of what the teachers do in each of the painting area, writing area, etc.	FS2 Sample
June 2014	Observations If the teacher is there is it a cue for learning/free play? Does the teacher do structured activities in all areas of the classroom?	Teachers A,B and C TAs
June 2014	External Moderation of FS2 Data	Teachers A,B,C and E LA External Moderator
May 2015	Pupil Interviews with children from FS2, Year 1 and Year 2 (see method section in Chapter 8) What do you do if you get stuck?	FS2, Year 1, Year 2 sample

3.7.1 Baseline Data

Quantitative data about children's levels of development needed to be collected at the beginning of the research process in order that consideration could be given as to whether children's cognitive development level had any impact on their understanding of the concepts being researched.

Cognitive Development is defined in different ways by different people. For the purposes of this research it was measured in terms of achievement against the developmental stages in the Areas of Learning and Development in the Early Years Foundation Stage Framework. As these stages are hierarchical, in terms of a child's skills and knowledge, the level of children's cognitive development was assessed against the different stages, which are each given a numerical points score. Children are deemed to have achieved a higher level of cognitive development in all areas based on their average points score across all twelve assessment areas. However, their development can also be assessed in individual areas, such as Maths and Reading, using their single point score for that Area of Learning and Development.

This measure was chosen because it was data which was already being collected by the school. However, this data set is difficult to correlate directly with other measures of cognitive development measured using different models.

The data was collected as part of both the school's normal data collection arrangements and, in the case of FS2, for the 'Foundation Stage Profile' National Assessment at the end of FS2 requirements. The data is updated three

times a year but, for the purposes of the project, the ‘Baseline’ data from September 2013 and the ‘Foundation Stage Profile’ data from June 2014 were used. The assessments are teacher assessments and, in order to check that judgements were moderated between classes, I attended moderation sessions between the teachers of FS1 and FS2. Teacher E is also a moderator appointed by the Local Authority to moderate judgements between schools.

The moderation sessions attended ensured that I was happy that teacher judgements between classes were accurate and there were no significant differences in the judgements made. In addition, at the end of the year a second external moderator from the Local Authority moderated the FS2 judgements as part of the Local Authority Quality Assurance process. The tracking document used to record the assessments is part of the ‘On Track’ (2012) system. This has been adapted by the school to give points against each judgement allowing a numerical value to be attached to the progress being made. See Section 4.4.1 for a more detailed summary of the how the ‘Baseline’ scores for this cohort were calculated.

3.7.2 Pilot Observations

As part of both the classroom observations and pupil interviews it was decided to use a mediating object, in this case a soft toy elephant named Eddie (Appendix Two). The reasons for using a mediating object are set out in Section 3.7.5 below. An initial observation was carried out in each class with the objective of introducing Eddie to the children and ensuring that the children did not find my presence an issue. Indeed the children were so used to seeing me

and other adults observe lessons that they did not appear to notice me; however they were interested in Eddie.

During the initial observations Eddie was brought into the classroom and the children were encouraged to show him what they were doing in the classroom. The response of every child was to walk off with Eddie and to show him what was happening. This immediately created problems because their conversation with Eddie could not be heard and therefore very little data was collected. Although the children and Eddie could be seen as part of the observation any interpretation of the actions was subjective. When Eddie was returned to the observer questions could be asked but the amount of data collected was still limited.

As a second pilot a small radio microphone was attached to Eddie. The children were initially intrigued by the microphone but as they were unaware of the fact they could be heard through the receiving speaker they soon ignored it. This time although the conversation could be heard, I could not always see who was speaking or what they were doing at the time, as I had to be positioned next to the speaker. Again this meant that data was could not be used effectively.

Following the pilot observations it became clear that talking directly to the children was going to be the only way to collect the data required. Therefore the study was redesigned to include pupil interviews using Eddie but also photographs around which the questions could be based.

The pilot observations (September 2013) provided data from the FS1 children, as well as those in FS2. It emerged from these observations, that when the FS1 children showed Eddie the classroom, their level of language development meant the children's meaning was sometimes unclear. Therefore, I had to ask many more questions to elicit the data from the children. These questions were sometimes leading by nature and I found that the data collected was open to interpretation in a way that the FS2 data was not. The FS2 children were clearer in their intentions. It was therefore decided to limit the pupil interviews to FS2. However, FS1 staff were asked to note any interesting observations of the use of the language and actions to do with *learn* and report these to me.

3.7.3 Classroom Observations

Observation is a tool for research in both the quantitative and qualitative approaches. It is the type of observation itself that demonstrates the differences between them. In the qualitative approach the observer is far more likely to be involved with the participants being researched. Participant observation is not structured by tick boxes, timed events or frequency tables but is on a continuum of observations ranging from 'full participant' to 'participant as observer' or maybe 'observer as participant'.

In terms of early childhood education, methods such as participant observation are able to help,

> “better understand young children’s lives and the world in which they live from a rich contextual framework”
>
> (Walsh, Tobin and Graue cited in Erwin and Guintini, 2000 p.241).

The children in this particular research were young enough to accept me, as researcher, as just another adult in the setting and interacted with me frequently. It is extremely difficult, as Colwell and O’Connor (2003) note, to remain non-participative with young children. The children were also used to adults discussing their activities with them.

In the pilot observations (September 2013) it had been necessary to take the role of a participant observer as Eddie needed to be introduced to the children and questions asked while observing what they were showing him. Although observation had proved unsatisfactory for collecting evidence with Eddie, further observations were conducted where I took a role that most closely resembled ‘Observer as Participant’.

This approach had both advantages and disadvantages. Non-verbal behaviour can be documented, relationships built and as data was collected the focus of the research developed in a more directed way. On the negative side the dangers of being subjective, biased, impressionistic and idiosyncratic (Cohen et al, 2000, p.313) were recognised.

In September 2013 a set of observations were carried out in all four classrooms focussing on the language the adults used. These were carried out in a range of

sessions from more formal whole class teaching sessions and story times to group work and during free-flow sessions. A total of more than 12 hours of observations were made.

As the adult language was the focus of the observations at this time the data was collected by initially noting the activity the adult was doing and then recording everything they said for either the natural duration of that activity or for 15 minutes at a time if there was no natural break.

The records of these observations are recorded in field notes. As Cohen et al (2000) note ‘thick descriptions’ lend themselves to ‘accurate explanation and interpretation of events’.

In the first set of observations (September 2013) what was said by the adult being observed was noted. Recording these observations would have meant using a tape or video recorder if the note taking had proved too difficult. However, this might have had the effect of altering the adult language as the staff would have realised that the foci of the observations was actually on them. In fact whilst they were obviously aware of my presence they had not been told what the focus of the observations were, in any particular session, in an effort to try and avoid changing the language they normally used. Occasionally, due to the rapid conversations, I found it difficult to keep up with the note taking, but the benefits were felt to outweigh the disadvantages. As Patton (cited in Hoepfl 1997) asserts participant observation allows the researcher to make observations about classroom life of which teachers are unaware. The benefit of

this in this research project was that when the summary was discussed later with the staff in September 2014 it gave both an insight into practice and into the language the children were using.

A second set of observations were carried out in June 2014 to verify the children's assertions about where the adults went in the classroom and observe whether an adult's presence led to an increase in the likelihood that a more structured activity was taking place. For these observations it was felt that a more structured approach was needed for the note taking. These notes were transferred immediately afterwards into a simple tabular format for further analysis.

McNamara (1980) warns researchers using participant observation that there is a danger of bias as observations can be unfocussed and lack direction. He claims that research can be unrepresentative because only a small amount of the data collected is used. Hoepfl (1997) also cautions that the presence of an observer can distort the classroom and the interactions of the observer can change what is happening there. Whilst these are genuine concerns acknowledged by Cohen et al (2000), the use of triangulation and of a number of repeated observations, which can then be judged to be representative, can go some way to alleviating these concerns.

3.7.4 Interviews

> "Interviews in ethnographic research range from spontaneous informal conversations in places that are being used for other purposes, to

formally arranged meetings in bounded settings out of earshot of other people."

(Hammersley and Atkinson, 1995, p.139)

Qualitative Research, in many fields, relies upon the use of interviews to collect information or to follow up observations. It is a tool which can be used in a very structured way to collect data for quantitative purposes or in a less structured format to aid the qualitative researcher. The key as Cohen et al (2000) say is 'fitness for purpose'.

There is a substantial amount of research in education settings that uses interviews as a qualitative research tool. One benefit is that interviews can be used in conjunction with observation with pupils, staff and parents (Koçak and Beckman, 2004, Erwin and Guintini, 2000) to explore issues in more depth although Woods (1986) would argue that traditionally it has not been used enough with other methods.

Several researchers talk about the advantages of gathering views from people involved directly with a particular project for evaluation purposes (Lance 2006, Moinian 2006). The benefits of this are that interviews can take the form of a conversation, which can be important when working with children, to collect as much data as possible in an informal way. Lance (2006) states in her research that she took on board the views of other researchers such as Stopper and MacBeath (cited in Lance, 2006) who believed that listening to the 'children's voice' could provide a mechanism for insight into teaching and learning.

There is disagreement as to whether substantial benefits in terms of knowledge can be gained from interviews with younger children. Cohen et al (2000) issue the following caution when interviewing young children:

> "children will tend to say anything rather than nothing at all, thereby limiting the possible reliability of the data."
>
> (Cohen et al, 2000, p.279)

In order to overcome this difficulty teaching children about the interviewing process is a task which needs to be undertaken if worthwhile data is to be collected. The natural curiosity of the young child will tend to take over if the interviewer, room or set up is unfamiliar. The theories regarding pupil interviews are varied but there are problems with interviewing children which are not always present when interviewing adults. Simons and McCormick & James (cited in Cohen et al, 2000) comment on particular problems with interviewing children:

> "establishing trust, overcoming reticence, maintaining informality, avoiding assuming that children 'know the answers', overcoming the problems of inarticulate children, pitching the question at the right level, choice of vocabulary, non-verbal clues……"
>
> (cited in Cohen et al, 2000 p.124)

Data arising from interviews with children can be unreliable, and this method was used with data collection from participant observation, in order to gain a clearer picture.

One way researchers overcome some of the issues relating to interviewing children is to use group interviews. How this method is used is dependent upon the age of the children. Hopkins (1993), when talking about primary age pupils, states:

> "I increasingly find group interviews with three or four students the most productive. Far from inhibiting each other, the individuals 'spark' themselves into sensitive and perceptive discussion."
>
> (Hopkins, 1993, p.124)

Lance (2006) considers that the benefits of group interviews outweigh those of individual interviews. She believes that individual interviewing of children can be 'intimidating' for the child. On the other hand Lewis (1992) believes that it is very difficult for some children in a group interview situation to express an opinion, leaving it to children with strong views to take over the discussion. In addition, she cites the difficulty of confidentiality in these circumstances as it is nearly impossible to guarantee confidentiality to a child when other children have heard their remarks.

For this project it was found that when the children were interviewed in pairs there was an element of copying what the other child said, which meant

comments had to be disregarded, and also in two cases a stronger child emerged and dominated the interviews. It was decided after one class had been interviewed, that interviews would be conducted with one child at a time.

The interviews took place in the small group working areas just outside the classrooms. The children were used to working here with adults so issues around unfamiliarity with the physical environment were avoided. It was decided to use photographs of the classrooms (Appendix Three) as prompts for the children (see Section 3.7.6 below for the rationale for using photographs). They were asked questions all phrased in terms of 'Can you tell Eddie…?' This tactic was used as it was felt that the children would give fuller answers to Eddie who was introduced as having no knowledge of school, than to me as a familiar adult.

The interviews were generally short and were normally the length of a teacher led classroom activity (no more than 10 minutes). If the interviewer felt the child was losing concentration then the interview was stopped. However, for the most part the children seemed to enjoy talking to Eddie and were pleased to tell him about their experience of classroom life. Notes were taken of what the children said in response to the questions and, as teachers often do this as part of classroom practice, the children did not seem to be concerned by this. As far as practicable what the children said in response to any particular question was noted verbatim.

In November 2013 the children were asked one particular set of questions about ‘What Eddie could do in the Classroom?’ and whether he was ‘Playing or Learning’. Once this data was analysed it was necessary to interview the children again.

In a further set of questions (March 2014), the children were asked to read to Eddie and were then asked when Eddie would be ready for a reading book. A third set of interviews (May 2014) related to where their teacher went in the classroom. Thus the interviews took place over a period of months and factors such as maturation over this time should be considered in the responses given.

Finally, in Strand Four there was a focus on whether or not when talking to Eddie children showed elements of responding metacognitively to a particular issue. As explained above in 3.4.4.2 some of the children in this sample were different, as children from the 2014-15 FS2, Year 1 and Year 2 cohorts were all used in this strand. Initially two general questions were asked of them to encourage them to talk: ‘Eddie wants to know what learning you do in your classroom?’ and ‘Can you tell Eddie what playing you do in your classroom?’ Only children who expressed a clear understanding between the concepts of *learning* and *playing* were selected for the interviews. Once the children were selected for the sample, the interview continued with the specific questions about ‘getting stuck’.

It is important to remember that in any form of interview bias can creep in. The interview style chosen meant that although mostly open questions were used

the children's answers meant that themes developed during the interview. This meant that some of the questions posed might have been leading questions, as there was no time to review the phraseology used.

Oppenheim in Cohen et al (2000) suggests that bias can occur through biased sampling, poor rapport, poor prompting or biased probing, or selective or interpreted recording of data/transcripts amongst other things. Sound recording of the interviews was considered but it was felt that this might have added another distraction for the children and there could have been problems with matching comments to the pictures the children were using.

3.7.5 A Mediating Object

> "Although some limitations exist, using puppets in interviews with children appear to help them to identify, clarify and verbalize their feelings."
>
> (Epstein, Stevens, McKeever, Baruchel and Jones, 2008, p.49)

It was decided early on that one way that children might be able to talk about their classroom experiences was to describe it to a puppet or toy. The toy was used as a new member of the class and all the questions in the pupil interviews were phrased in terms of *Eddie the Elephant* needing to know or find out things from the children. By using a toy it was felt that the children might describe for him things that they would expect the interviewer as a member of the school

community to already know. Arthur, Waring, Coe and Hedges (2012) talk about the use of puppets helping children,

> "….identify, clarify and verbalise feelings and also assisting reducing fears and anxieties about being interviewed."
>
> (Arthur et al., 2012, p.180)

3.7.6 Using Photographs as Stimuli

In addition to using a toy, it was felt that the use of a common set of photographs as stimuli to promote discussion with the children, in the interview phase of the research would encourage the children to talk with greater confidence about their classroom. This was because the interviews took place outside the main classroom and, in addition, this removed the possibility that I might use names for classroom areas which could either lead the children's answers or which could confuse them if the word used was not the name associated with that area by the child.

Clark (1999) makes the case for supporting the interview process with such stimuli.

> "The verbal interview relies primarily on linguistic communication. For very young children who are still acquiring language, this limits greatly what issues and questions the researcher can pursue. A young child's cognitive development also challenges an interviewer who attempts to ask about abstract ideas without placing them in a tangible, concrete

> context (Clark 1996). In addition, young children seldom share information among themselves strictly through question and answer sessions. This places a strict question and answer interview outside their sociolinguistic repertoire."
>
> (Clark, 1999, p.39)

Allowing the children to choose which photographs they spoke about meant they had some personal link with the photos.

> "Several other researchers (e.g., Cappello, 2005; Clark, 1999; Horstman & Bradding, 2002) encouraged researchers to integrate visual methods of data collection (e.g., photos, drawing) into interviews to make interviews fun and not like a test in school."
>
> (Epstein, Stevens, McKeever and Baruchel 2006, para.4)

Epstein et al (2006) also note in relation to their research that the use of photographs meant that it allowed the researcher to leave the lead of the interview to the children should they prefer. The ethics of power commented on by Arthur et al (2012) where the researcher, due to age and position, might be seen to be holding the power in an interview are in their opinion neutralised by the introduction of an intermediary such as photographs or puppets.

3.8 Data Analysis

Three different sets of data were collected in relation to the research strands. Firstly, the 'Baseline Assessment' on entry to FS2 (September 2013), of each

child, gave information about the development of the child, against a set of skills and abilities for each Area of Learning and Development of the Early Years Foundation Stage Framework. Secondly, classroom observations (including the pilot observation) which considered the use of language by the adults, their positioning in the classroom areas of provision and observed whether they focused on structured or unstructured activities. Thirdly and finally data from the trial interviews and four sets of pupil interviews conducted in October 2013 (trial interviews), November 2013, March 2014, May 2014 and May 2015.

The data from the 'Baseline Assessment' using the 'On Track' (2012) system was analysed to give a score for each child and an average figure for each class. The data collection method for the 'On Track' 'Baseline Assessment' is through teacher observation of the child scored against specific criteria. The Assessment Tool allows this to be presented in a comparative and measurable way through the use of an average points system. Using the different analyses of progress and attainment it was possible to determine whether pupils were likely to reach a 'Good Level of Development', the Expected level at the end of FS2, or to reach that level in particular areas, for example in Communication and Language Development or Personal, Social and Emotional Development which were pertinent to the specific areas of research. The formal, reported, assessment at the end of the year (June 2014) also allowed analysis of progress across the FS2 year and an indication of how the children performed against the national average at this age. This data was used together with some of the pupil interview data when cognitive development was considered as a factor for understanding the concept of *learn*.

The classroom observations and the pupil interviews were recorded in tabular form to allow for later analyses of emerging themes. The initial classroom observations weren't carried out using verbatim transcripts and they had to be disregarded due to the fact that the observation notes only gave an indication of what had been said, rather than the actual phrases and this proved difficult to analyse without knowing the context of each remark. A new set of observations of adults were completed and the analysis of the teachers' language was broken down into 5 groups: questions, scaffolded comments, instructions, use of the *playing and learning* comment and others (which mostly comprised praise for the children). These groups were common to all observations when the language the adults used was analysed. The first three of these groups embodied the type of interactions used to move learning forwards. A subset of questions was also analysed to consider whether teachers were using open or closed questions.

During the pupil interviews all the responses from the children were documented in writing at the time of the interviews and transcribed soon afterwards. Immediately after the trial interviews (October 2013) the responses were analysed for commonality of language, resulting in *learn*, *play* and *do* being identified as the most frequently used verbs. The analysis of the interview data (November 2013) considered these terms on a child by child basis and then class by class. The word *work* also emerged from that set of interviews. The use of particular words to describe classroom activities and the language the teachers used when talking about activities in the classroom were then compared to see if there was a common set of links or frequency of use. A

further analysis was made between each of the terms used and the activities that the children referred to when using the terms, for example, did they specifically use *play* in relation to the Small World Area and *learn* in relation to the Writing Area?

The third set of pupil interviews (May 2014), focused on where adults based themselves in the classroom and whether that had an impact on how the children saw *learning*, were analysed for the specific words *learn, play, do* and *work* relating to the areas in the classrooms. In addition to this the children's responses were also analysed for information about the children's perceptions of the Areas of Provision in the classroom where the teachers based themselves. An analysis was also correlated against a further separate set of observations (June 2014) of the adults' locations to see if there was a real relationship between the children's perceptions of what the teachers actually did in each area of the classroom and the observed evidence and to see whether the teachers undertook structured or unstructured activities when they were in each Area of Provision.

All of the pupil interview responses were analysed for the relationship between the word *learn* and the activity it was applied to, in order to ascertain whether the children used it in an appropriate context or whether it was a word used without understanding. Where it was used correctly in context, the exact area it was applied to, for example a new skill, new knowledge or new understanding, was noted.

The analysis of the above data gave indications of some of the requisites that might influence the development of an understanding of *learn*, and therefore a basic level of metacognition. However, it did not prove that the children demonstrated metacognitive knowledge or skills in classroom situations. Strand Four was devised to provide a data set that could be analysed to see whether or not such knowledge or skills could be verbalised by the children. Strand Four's pupil interviews (May 2015) were analysed for the use of metacognitive strategies in a particular situation and how these strategies had been acquired. Throughout the process of analysing the data new themes have emerged, some of which have been followed and others which will have to be the focus of future research.

Although it is recognised that starting the interviews with an already developed coding system, schedule or rating scale would have provided standardised data, it was an important element of this research to be able to follow themes as they emerged. Whilst this methodology is not the Grounded Theory approach in its purest sense, as described by Cohen et al (2000), there are aspects of this type of approach that were included. Reading and rereading the interviews led to the identification of certain specific categories and it was possible to link them with other findings to confirm which themes should be investigated further.

3.9 Validity

Validity, both internal and external, had to be considered in relation to this project. Cohen et al (2000) talk about internal validity as demonstrating that a particular event, issue or data set that a piece of research provides can *'actually*

be sustained by the data' and external validity as whether the research can be generalised to the wider population.

3.9.1 Internal Validity

Internal validity issues were addressed through triangulation where possible and as Cohen et al (2000) point out:

> "Internal validity in ethnographic research is also addressed by the reduction of observer effects by having observers sample both widely and stay in the situation long enough for their presence to be taken for granted."
>
> (Cohen et al., 2000, p.108)

As the researcher was already well known to the children and present in the classroom areas on a daily basis this added to the internal validity of the research as her presence was taken as normal by the children.

The chosen approach to this research, which involved both qualitative (mainly) and quantitative (less so) approaches, has meant that in the analysis phase there was not always a range of statistics available. The concept of 'Constant Comparison' as described by LeCompte and Preissle (cited in Cohen et al 2000) describes the methods of coding and comparing incidents with other events over a period of time. Within this data analysis an element of verification can be built in as the researcher is comparing data across different situations, times, groups of people and through a range of methods. This, as part of the

research process, provides a checking mechanism for the findings. Bell uses the Open University description:

> "…cross checking the existence of certain phenomena and the veracity of individual accounts by gathering data from a number of informants and a number of sources and subsequently comparing and contrasting one account with another in order to produce as full and balanced a study as possible."
>
> (Bell, 1999, p.102)

Cross checking observations of both children and staff in the classroom with some of the data from the Pupil Interviews was used as a method for triangulation for part of this project. Taking the data that the children gave concerning where their teacher went in the classroom and comparing it with the actual observations of the staff during session times not only gave a picture of whether or not the children's perceptions were accurate, but it also gave an understanding of what the children remembered about where they had encountered adults. The two different data gathering methods for this part of the research were contrasting and therefore an element of triangulation between the two was possible, thereby reducing the chances of consistent findings being attributable to similarity of method.

The main body of quantitative data for the project has been taken from the 'On Track' tracking system. As previously mentioned the data collection process for

‘On Track’ is teacher assessment collected through normal classroom practice, but moderated between the staff.

3.9.2 External Validity

External validity is more problematic. The project took place in a single setting and is a small scale study employing mainly qualitative methods. Whilst the sampling is a convenience sample the population it is drawn from is specific to this particular FS cohort and may not be reproduced exactly in another setting. Therefore this thesis does not attempt to prove external validity and generalise the findings to a wider population.

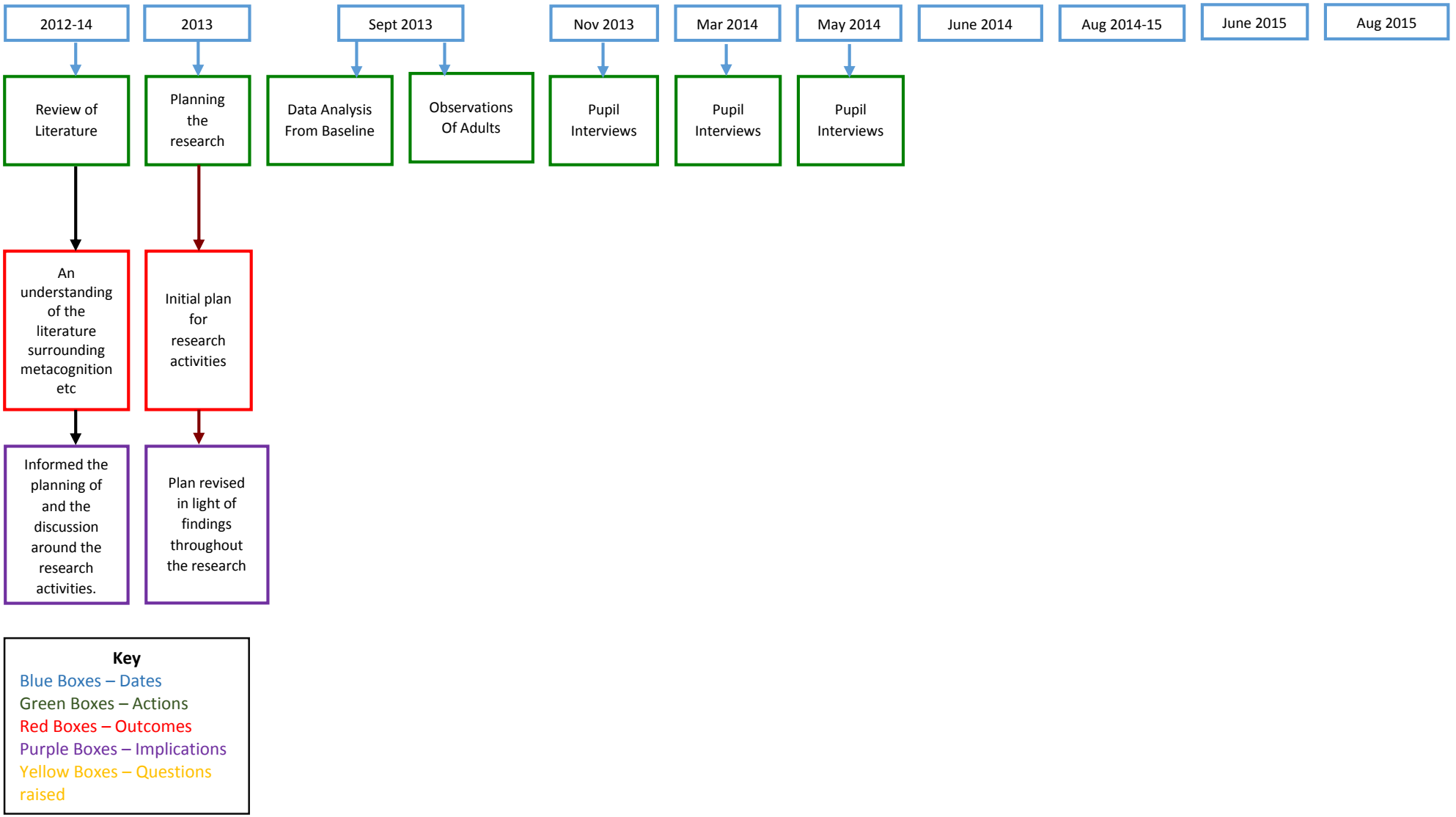
3.10 Conclusion

This chapter has laid out the methods used for collecting the data and the research design employed in the research. It has given a description both of the benefits, or otherwise, of the methods chosen and issues surrounding their use. It considers issues of bias, validity and verification. It should be remembered that this is a single setting case study and any generalisations cannot be made outside of this setting, although themes may arise that can be further explored. However, using the concept of relatability formulated by Bassey (2001), others will be able to consider how relatable the conclusions are to their context and hence consider the extent to which they can be applied albeit with due adaption.

Section 3.11

The Research Journey Part Two

Figure 3.1 The Research Journey Part Two



Chapter Four

The Use of the Word *Learn*

4.1 Introduction

This strand of research focussed on the language used both by adults and by children in the classroom. There were initially two considerations: what language did the adults use in the classroom during teaching activities and what language did the children use when talking about what they did in their classroom. Various questions arose from these considerations including:

What language do children use to describe activities they take part in?

Is cognitive development a factor as to whether they use specific, defined, language or not?

Do children have an understanding of the differences between the way they use language related to different activities?

Is there a link between what adults say to children and how the children describe what they do in school?

Do children use terms differently, for example are they copying adult language or using language, for example *learn*, specifically about some things but not others?

The research evidence was analysed in different ways to answer the questions above within the limitations of a small scale research project.

4.2 Which Words do Children use When Talking About Classroom Activities?

The focus of this part of the research was the children's language: did they use the term *learn* at all and, if so, did they use it in an 'appropriate' way? In order to find this out Eddie the Elephant was used as a conduit for encouraging the children to talk about their classroom experiences.

The initial activity involved using a question from the researcher to the children 'Eddie has come to see what goes on in your classroom – can you show and tell him?'

This activity was designed to allow the children to take Eddie on a tour of the classroom whilst talking to him about the activities. I had hoped to be able to hear what the children talked to the elephant about and whether they used any language related to the concept of learning. However, it soon became clear that giving the children the ability to wander with Eddie made it almost impossible to hear what was being said.

In the first observation in Birch Class all activities had a strong learning focus and so there was plenty of opportunities for the children to use *learn* in describing the activities. In the very few exchanges that were overheard it was impossible to tell if any language associated with learning was used. It very

quickly became obvious that without linking Eddie to a microphone there was no way to hear the language the children used in the different areas of the classroom where different activities take place. They might have been talking to Eddie about what they did in each area, but the exchanges couldn't be heard and recorded.

A session with a microphone attached to Eddie and a remote speaker was tried so I could listen to the conversations. Much of what the children said, and the actions that accompanied the conversation with Eddie, were missed, so that it was decided the way in which he was used needed to be much more structured to enable useful data to be recorded.

The decision was made to use pupil interviews supported by photographs of all parts of the classroom. Initially pairs of children were spoken with, but it was almost immediately realised that after the first couple of interviews, a child copied what their partner said and so it was decided to speak to children separately. A set of photographs of the relevant classroom was provided and Eddie was placed on the table with the photographs. Children were asked 'Can you tell Eddie what happens in your classroom?' Children used the photographs and talked about what they did. I sometimes used additional questions, or offered another picture, to prompt further discussion if the children became quiet. In all 32 children chosen at random were involved in the pupil interviews. 250 responses were gathered and analysed.

At the outset a trial was conducted using the picture of the Painting Area; such areas being common to all the classrooms. Immediately, it became clear that there was a difference in the use of the words *learn, play* and *do* between different children which was also class dependant. The children in Birch Class used the word *learn* and made comments that implied *do,* but only one comment described children *playing* in the painting area of the classroom. However, in the other classes the predominant terminology used to describe activities in this area was *play* or *do.*

These findings raised two questions. Firstly was the use of a particular term linked to the level of development of the individual child? In other words if a child had a higher level of development did they use a wider range of language or express a better understanding? Secondly, did the children's differing school experiences have an impact on their use and understanding of *learn, play* and *do*? Did the language the teacher in their class used, and the way in which they used that language, have an impact on the words the children used?

4.3 Which Words do Children use to Describe Classroom Activities?

Following the completion of the pupil interviews it became obvious that some children acknowledged a difference between *learn, play*, *do* and *work*. Analysis of the 250 pupil interview answers showed 59% of comments described an activity directly using the above terms. Children in Birch and Alder Classes used *learn* more than those in Cypress and children in Cypress *play* slightly more than those in the other two. However, uses of both *learn* and *play* amounted to less than 20% each of the total answers.

Vignette 4.1 The use of *learn* in the sense of *know-how*

Warwick, an expert when building with wooden bricks, was talking to Eddie about the photograph of the construction area and commented that Eddie would be learning. He said,

'Learning how to build houses with real bricks.'

When Warwick was asked how he knew what to build he replied,

'I know because I think something in my head'.

Vignette 4.2 The use of *play* linked to a specific toy

Emma was talking to Eddie about the photo of the Doll's House, one of her favourite areas in the classroom. She clearly uses the term play and links it to having fun.

'This is the house in the classroom to play and have fun. It needs characters to play in the house.'

Her friend Lauren adds to this view that when you are in the Doll's House you are

'Playing with all the dollies.'

In Birch and Cypress classes the largest number of comments about activity mentioned neither *learn* nor *play*, but were about *doing* activities with the equipment or in the areas they could see in the photographs. These comments were 25% (63 comments) of the total made.

Vignette 4.3 An example of a child's description of *doing* an activity

One photograph showed a table top activity where different coins had to be sorted into pots. Mary when talking to Eddie described the activity. She had been asked 'Who tells you to do the activity?'

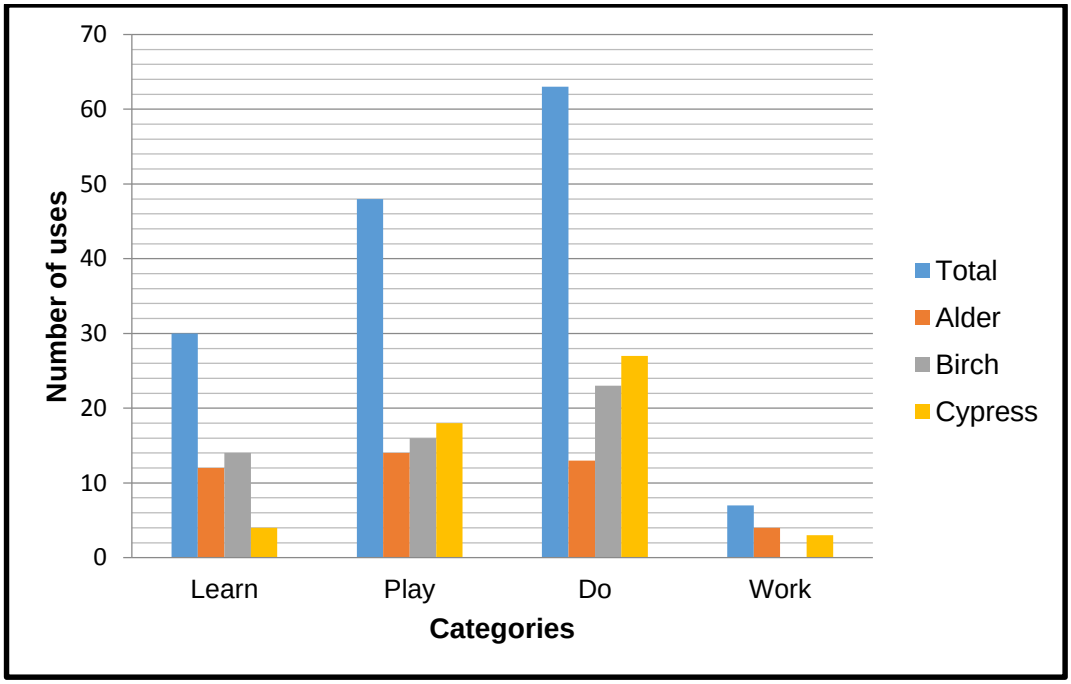
'No one tells me we just had to put the right coins in the right pots'.

There were some recording sheets pinned to the board behind the table and she commented that,

'Teacher C wanted to put this up for everyone to see.'

This was typical example of how the children described activities in the classroom that they could do.

Figure 4.1 The use of *learn*, *play*, *do* and *work*



When using the term *work* in discussions the children nearly always used this to refer to what adults do. This was most clearly demonstrated in the use the children perceived adults made of the computer. In the vast majority of responses the children spoke about *playing* and occasionally *learning* at the computer but when asked what adults did in the computer area they talked about their teacher *working* there. It is possible that this is because at break or lunchtime when they returned to the classroom their teacher might be preparing work or possibly that when their parents are at the computer they perceive this to be related to their working lives. There were eight comments relating to *work* by adults; five related to the computer and three to working at tables.

This clearly means that children are able to use different language to describe what happens in the classroom during the day. Almost every child interviewed used the actual word *do*, or similar verbs, more frequently than any other language. This is of interest as Early Years Practitioners often talk in terms of *learn* or *play*, indeed the phrase used in school *Playing and Learning* implies children are doing one or the other, or perhaps learning through play, but actually it may be that the children perceive *do* as not necessarily *playing* or *learning*. Children who used *learn* also used *play*. In Birch class the balance of *play* and *do* was approximately equal, but in both Cypress and Alder Classes *do* was used more frequently than *play.* This is most likely linked to the language the children hear in the classroom from adults.

Analysis then focussed on whether there were any specific similarities, or differences, between the children who did use the term *learn* and those who did not.

4.4 The Children's Individual Level of Development

4.4.1 Data for the FS2 Classes

Data about the cognitive development of each class was taken from the September 2013 'Baseline' Data on entry to FS2. This was recorded using the 'On Track' (2012), the North Yorkshire County Council tracking system based on the Early Years Foundation Stage (EYFS) Framework. Using the EYFS months which are used for assessing children's levels of development, and giving each a points score, averages of each of the chosen areas were calculated for the purposes of this research. These are detailed in the following table.

Table 4.1 Points awarded for each level of the EYFS Framework

EYFS Months	Points
0-11 months	1
8-20 months	2
16-26 months	3
22-36 months	4
30-50 months Emerging	5
30-50 months Developing	6
30-50 months Secure	7
40-60 months Emerging	8
40-60 months Developing	9
40-60 months Secure	10
Expected Level of Development at end of FS2	11
Exceeding Level of Development at end of FS2	12

This meant that a numerical value representing the assessment level for each individual child was readily comparable. It also enabled the levels of development of each of the classes, or of groups of children, to be easily shown.

The Expected Level of Development (National Expectation) at the end of FS2 is known as a 'Good Level of Development'. In order to achieve this 11+ points must be achieved in each of 12 areas.

Table 4.2 The EYFS Areas of Learning and Development contributing to a 'Good Level of Development'

Areas of Learning and Development	**EYFS Areas of Learning and Development contributing to a 'Good Level of Development'**	**12 areas of assessment for 'Good Level of Development'**
Prime Areas of Learning	Communication and Language	Listening and Attention
		Understanding
		Speaking
	Personal, Social and Emotional Development	Self-confidence and Self-awareness
		Managing Feelings and Behaviour
		Managing Relationships
	Physical Development	Moving and Handling
		Health and Self-care
Specific Areas of Learning	Literacy	Reading
		Writing
	Mathematics	Numbers
		Shape, Space and Measures

47.1% of this cohort of children reached a 'Good Level of Development' by July of their FS2 year. This is below the National Average of 60.4% and can be attributed to the low starting points of the cohort, particularly in spoken language.

On entry to FS2 it is expected that children are entering the 40-60 months band at the Emerging level. Therefore a ‘Good Level of Development’ on entry to FS2 would be 8+ points in these areas. Only one child achieved 8 points in all areas at the time of the ‘Baseline Assessment’. 66 children did not meet this level. The indications therefore are that at ‘Baseline Assessment’ the children are operating at below the Expected Level in the EYFS Areas of Learning and Development that contribute to this assessment. 17 children (25%) met the 30-50 months secure band (7 points) in all these areas. These children would have to make more than Expected Progress to meet a ‘Good Level of Development’ at the end of the Foundation Stage. Of those 18 children who met, or exceeded, the 30-50 months secure band (7 points) across the classes, 10 were in the group who took part in the pupil interviews.

It was important that variables between the classes were considered at the early stages of the research. The three FS2 classes comprised children who attended FS1 at the school as well as children who joined the school at the beginning of FS2. Normally each of the three classes is established with an equal spread of children at each developmental level based on the school’s existing knowledge of the children who had been in FS1. However, as about a third of each class joined the school at the beginning of FS2 the balance between classes can become uneven because the school does not know the developmental level of the new children.

In this particular cohort Birch Class gained more children with developmental delay and speech issues than either Alder or Cypress Classes.

The assessment data was analysed for those judgements that contribute to the 'Good Level of Development'. This analysis provided a 'Baseline' (September 2013) both for all of the FS2 classes and also for individual children. In addition, an average for the 67 FS2 children was also calculated thereby allowing individual children's scores to be compared to the average for the cohort.

Average scores were also calculated for each of the EYFS Areas of Learning and Development and a judgement was made as to whether the development of individual children was above or below the average in each area for the cohort. The lowest average cohort scores were in the area of Communication and Language Development, which was 6.5, and Reading, which was 6.2, both of which fall in the 30-50 months developing band (6 points). The 'expected' entry to FS2 is 8 points, which is the 40-60 months emerging band. This would suggest that Communication and Language Development and Reading for this cohort are significantly below the nationally expected starting level.

The three classes have a similar make up in terms of average scores for Communication and Language Development with Birch and Cypress at 6.5 and Alder at 6.7. In terms of scores for Reading, Writing and Mathematics the classes have slightly different profiles. In Reading they all have scores which fall within the 30-50 months developing band (6 points). Birch and Cypress are at the lower end of the band at 6.1 and 6.0 whilst Alder is mid band at 6.5. In Writing all classes fall into the 30-50 months secure band (7 points), although Birch only just makes it into the band at 7.0, whilst Cypress scores 7.3 and

Alder is at the top end at 7.7. In Mathematics all three classes are in the 30-50 secure band (7 points) with Birch and Cypress at 7.2 and Alder at 7.5.

In every area children in Alder perform at a higher level, although all three classes are always within the same band. Birch is generally the lowest performer in the band, often only just within it. Looking at the make-up of the classes Birch has more children who have a diagnosed learning need in terms of language development, lack of speech or global delay. Although Alder and Cypress each have children with a low level, generally more of their children fall within the 30-50 month bands. It can therefore be said that Alder and Chestnut Classes are performing at a higher cognitive level, on these measures, than Birch Class.

At the end of the year 33 children achieved a 'Good Level of Development' (11+ points) in all the EYFS Key Areas of Learning and Development at the end of FS2. 54% of the children in Cypress Class achieved this, 45% of children in Alder Class and 43% of Birch. Considering progress across the year this would suggest that there has been good academic progress. 53% of the children involved in the Pupil Interviews achieved a 'Good Level of Development' at the end of FS2.

4.4.2 The Cognitive Development of the Pupil Interview Sample

32 children, out of a possible 67, took part in the pupil interviews (November 2013) where the data about using *learn* was gathered. The first analysis considered the group of children who had achieved 7+ points in all the EYFS

Key Areas of Learning and Development at the 'Baseline Assessment' (September 2013) on entry to FS2. These children showed the most all round development. Only one child met the expectation at this stage (8 points in all the areas) so it is important to remember that the research cohort at 'Baseline' was performing below expectations on entry.

One hypothesis was that more of these children, who had achieved 7+ points, would use the term *learn* than the group who had not reached the 7+ points level of development. 17 children in the cohort reached the 7+ points level of whom 14 were in the Pupil Interview Group.

43% of children who used *learn* in the pupil interviews had 'Baseline' scores at 7+ points. Of those who did not use *learn* 44% of children had reached 7+ points. This showed little difference in the 'Baseline' scores between the two groups and no indication that the use of *learn* was linked to cognitive achievement in the 'Baseline' Assessment.

Table 4.3 The use of *learn* related to 'Baseline' scores

	<7 Points in all areas	**>7 Points in all areas**
Using *learn*		
Alder Class	1	4
Birch Class	4	2
Cypress Class	3	0
Total	8 (57%)	6 (43%)
Not using *learn*		
Alder Class	1	1
Birch Class	6	3
Cypress Class	3	4
Total	10 (56%)	8 (44%)
Total Number of Children	18 (56%)	14 (44%)

The next area to assess was whether specific areas of development from the 'Baseline Assessment' of the EYFS Key Areas of Learning and Development would give a clearer indication of how children used *learn* regardless of whether they had reached the 7+ points level of development or not.

The Communication and Language (CL) assessment comprises the areas of listening and attention, understanding and speaking. 69% of the children in the pupil interview group had a CL score above 6.5 points (the cohort average) and 9% above the national expectation of 8 points. Although the group interviewed was randomly selected, it is evident that more of the children who had above the cohort average CL development were in this group of 32. The gender mix was 18 girls to 14 boys. 67% of girls had a CL score above 6.5. 71% of boys had a CL score above 6.5. This allowed any gender difference in the group to be ruled out as the CL scores for boys and girls were generally equal.

Of the children who used the term *learn* 79% had a 'Baseline' CL score of above 6.5 (the cohort average) and 14% above the expected level of 8. 39% of the children who did not use the term *learn* had a Baseline CL score of below the cohort average. This would suggest that there is some evidence to suggest that those children using the term have a better developmental level in Communication and Language, although the cohort sample group as a whole group was performing below national expectation.

Table 4.4 The use of *learn* related to Communication and Language Development scores

	< 6.5 Points in CL	> 6.5 Points in CL	> 8 Points in CL	Total
Using *learn*				
Alder Class	**0**	**5**	2	**5**
Birch Class	**1**	**5**	0	**6**
Cypress Class	**2**	**1**	0	**3**
Total	**3 (21%)**	**11 (79%)**	2 (14%)	**14**
Not using *learn*				
Alder Class	**0**	**2**	0	**2**
Birch Class	**5**	**4**	0	**9**
Cypress Class	**2**	**5**	1	**7**
Total	**7 (39%)**	**11 (61%)**	1 (6%)	18
Total Number of Children	**10**	**22**	3	**32**

However, literature on this subject suggests that children may be aware of the concept but unable to express their understanding of *learn.* The level of Communication and Language Development may, therefore, be a factor not in whether they understand, but whether they can use the language.

The average Personal, Social and Emotional Development (PSED) score for the cohort was 6.5, which is below the expected level on entry to FS2. Of those children who used the term *learn* 64% had a PSED Baseline above 6.5 and 14% above 8. The 14% correlate exactly with those who scored above 8 in CL. Of those who did not use the term *learn* 82% had a Baseline above 6.5 and 6% above 8. This would suggest that a PSED level does not have a significant impact on whether the term is used or not.

Table 4.5 The use of *learn* related to Personal, Social and Emotional Development scores

	< 6.5 Points in PSED	> 6.5 Points in PSED	> 8 Points in PSED	Total
Using *learn*				
Alder Class	**0**	**5**	2	**5**
Birch Class	**2**	**4**	0	**6**
Cypress Class	**3**	**0**	0	**3**
Total	**5 (36%)**	**9 (64%)**	2 (14%)	**14**
Not using *learn*				
Alder Class	**1**	**1**	0	**2**
Birch Class	**5**	**4**	1	**9**
Cypress Class	**1**	**6**	0	**7**
Total	**7 (39%)**	**11 (61%)**	1 (6%)	**18**
Total Number of Children	**12**	**20**	3	**32**

Physical Development is also part of the EYFS Areas of Learning and Development and is included in the 'Good Level of Development' assessment. Two assessments are made: 'Moving and Handling' and 'Health and Self-care'.

Within the cohort the 'Health and Self-care' judgement was significantly higher than any other judgement made in any other area. 81% of the cohort met or exceeded the national expectation at 8+ points. As this judgement is not in line with any other of the Foundation Stage Profile Key Area judgements a decision was made that any possible links to the results in Physical Development would be disregarded.

The 'Specific Areas of Development' from the 'Baseline' are compared in the following table.

Table 4.6 Average points scores for Specific Areas of EYFS Areas of Learning and Development at 'Baseline'

	Reading	Writing	Maths
Class average			
Alder Class	6.5	7.7	7.5
Birch Class	6.1	7.0	7.2
Cypress Class	6.0	7.3	7.2
Year Group average	6.2	7.3	7.2
Interview Group average			
Alder Class	7.6	8.3	8.2
Birch Class	6.1	6.9	7.2
Cypress Class	6.3	7.7	7.5
All	6.7	7.0	7.5
Children using *learn* average			
Alder Class	7.6	8.2	8.1
Birch Class	6.2	7.5	7.8
Cypress Class	5.7	7.3	7.0
All	6.6	7.7	7.7
Children not using *learn* average			
Alder Class	7.5	8.5	8.5
Birch Class	6.0	6.4	6.8
Cypress Class	6.6	7.9	7.7
All	6.4	7.2	7.3
Year Group Developmental Band	6 – 6.9 30-50 developing	7 – 7.9 30-50 secure	7 – 7.9 30-50 secure

Those children who used the term *learn* were attaining above the year group average at 'Baseline' in the specific areas of Reading, Writing and Maths. This would suggest that the level of development may have an impact on whether, or not, the term was used. However, it should be noted that all the scores are within the same developmental band and there is only a 0.2 - 0.5 difference between those using *learn* and those not using *learn*. Any generalisations taken from these scores need treating with caution.

Therefore, on average even where the children are not reaching the 30-50 secure level across the EYFS Key Areas of Learning and Development (apart from PSED) the level of attainment was slightly higher for those who use *learn* than for those who didn't. It should be remembered however, that of the group of 32, 14 used the term and 18 did not.

Learn is used by children to describe what happens in the classroom, all be it only in a limited way, and the children's understanding of the concept of learning is explored further in Chapter Six. If a true understanding of metacognition at this age is to be developed further, then both use of the word *learn* and what children understand by the concept will be important.

4.5 What do the Children Apply *Learn* to?

Of the 30 comments using the term *learn* there were some similarities. In 93% (28) of the comments *learn* related to a skill, for example learning to play a computer game, learning to paint a frog, or learning to sound out a word. This could be referred to as *know-how.* In 7% (2) of the comments there was an indication that you could *learn* about something such as dinosaurs. However, in one set of Pupil Interviews where children were asked how Eddie would know when he was ready for a reading book no comments using *learn* in relation to reading were made.

One conclusion from this data would be that children at this stage apply *learn* to things that have a beginning and an end, *episodic learning.* They are able to understand that there was something they previously couldn't do and now they

can. One hypothesis is that the children cannot see a beginning or end to Reading and therefore do not perceive it to be something that is *learnt.* They use the term ‘read’ and know that if they are going to move forward they have to be a ‘good reader’ or ‘do good reading’. However, there were several comments related to aspects of reading which indicate they have to learn letters, words or sounds. These again are short beginning and end tasks where the child can easily identify what has been learnt. This area is explored further in Chapter Six.

4.6 Does the Teacher Make a Difference?

47% (14) of the comments using *learn* came from Birch Class. Of the three classes Birch’s average ‘Baseline’ scores were below those of both the other classes which may indicate that cognitive development does not have an impact on the use of specific words and that another factor is important.

Comparing Birch to the two other classes, Alder had 43% (13) of the *learn* comments and Cypress 13% (4). However, in comparison it was children in Birch Class who had the lowest average level of cognitive development of the three classes, children in Alder Class had the highest and in Cypress Class, were in the middle.

There is no clear pattern. One explanation is that there is probably another influencing factor. The difference may be the language that is used within the classroom by the adults and the way it is used.

12% of the comments made to Eddie during the Pupil Interviews either used the word *learn* or clearly defined the concept. All classes have similar ranges of ability, similar Areas of Provision and work in the same way with a mix of adult-led and free-flow activities. One difference could be the Teacher and Teaching Assistants who work with each class.

Out of the 250 recorded responses only 30 used *learn* in a relevant context. It is clear that although some children can use this term, the use of *play* or *do* accounted for many more comments from children about what happens in their classrooms. However, some children clearly understand that there is such a word as *learn* and there is some indication that the concept of learning is understood as the word is used in an appropriate context.

4.6.1 Research Activities

Observations of adults were carried out in the classrooms at different points during the day. These observations included focus teaching sessions and free-flow sessions, where teachers worked alongside children in an informal way. The language used was grouped to allow analysis of the type of interaction between adult and children in the classroom.

At first exact transcripts were not used but the type of language used was noted. Following analysis it became evident that this had not been beneficial as it only gave an indication as to the type of language used by staff and not exact words. These observations were disregarded and subsequently, in future observations, the exact words used by the adults were recorded.

Observations of adults were between 10 and 20 minutes in length. The adults were obviously aware that an observation was taking place but in order to limit, as far as possible, the undue use of any particular language they were not given any indication as to whether it was adults or children who were being observed. In all 234 pieces of adult speech were recorded and analysed.

The analysis of the teachers' language was separated into 5 groups: questions, scaffolded comments, instructions, use of the *Playing and Learning* comment and others, which mostly comprised praise for the children. The reasoning behind classifying language into these groups was to gain a straightforward view of the language the teachers were using. I chose the groups as they embody a typical range of language used when teaching, either a class or a group, and they were common to all observations.

Questions: Teachers use questions to elicit information or move learning forwards. All the questions were categorised into open or closed questions.

Scaffolded Comments: these refer to the comments made by teachers where they were supporting the children's learning by putting a commentary to the child's actions, telling the children what they have done in order to emphasise a specific concept or learning point or eliciting further information from the child in a structured way designed to support learning.

Playing and Learning is a comment used by the teachers to encourage the children to use the areas effectively and view everything in the classroom as equally valid.

Instructions: these were very specific comments relating to what teachers wanted children to do as part of each activity.

Having analysed the observations it was very clear that over 50% of what adults said were questions to either groups of children or to specific individuals. 13% (30) of the comments were instructions and 21% (49) other comments, mainly praising children for their efforts. 2% (5) of comments were the use of the single phrase P*laying and Learning.* 16% (38) of comments were scaffolded comments which were used by adults to move learning forwards.

It is clear from the analysis that the teachers ask more questions as part of the learning progress than other types of language. The type of questions were analysed and placed in two groups, closed and open. By closed it meant they required only a yes or no answer or were asking a question to which a simple single answer was required e.g.

What is 6+4? (Teacher A)
What does Monday start with? (Teacher B)

Open questions included questions that encouraged the children to consider different options for an answer or to discuss possible answers such as:

Tell me something about that number? (Teacher B)

What do you think you are going to do? (Teacher A)

In all 35% (41) of the questions asked were open questions and 65% (76) closed.

Scaffolded comments included those that added a commentary to what the children were doing:

I really like the way you put your bigger numbers first and your smaller numbers second. (Teacher A)

In this way the adults are affirming an action already carried out.

Other scaffolded comments are more open, but nonetheless clearly explain the teachers' expectations to children so there are no misunderstandings as to the purpose of each activity.

We are going to write a sentence with a new digraph. (Teacher C)

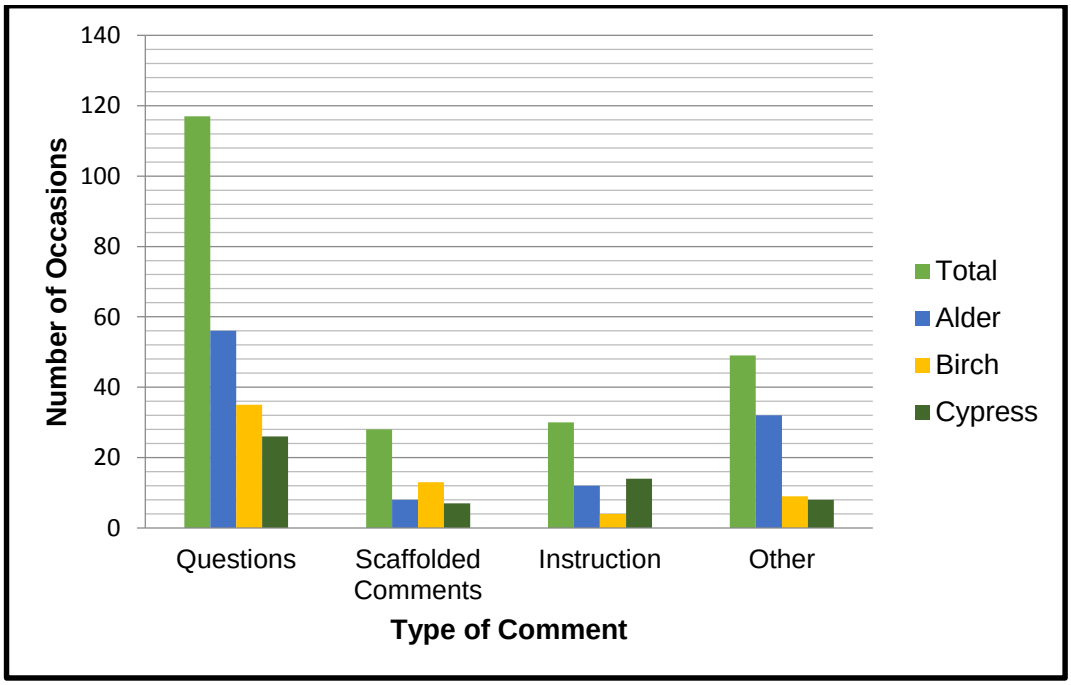
There was no mention of *learn* in any of the analysed comments. At no point in any of these observations did the staff talk about *learning* specifically. There were five uses of the school's term *Playing and Learning* but without any specifics attached to it.

4.6.2 Analysis of the Language Used by the Adults

The language of the adults was analysed to see if it had an impact on how children spoke about the activities they completed.

Analysis was undertaken on a teacher by teacher basis to review the language they used in the four key categories. The assumption was that if each teacher used a different balance of language, then it is possible that the teachers' use of language could be a factor in the specific language used by the children. Whilst the balance of language was different for each teacher, one similarity was that all three used predominantly more questions than other forms of speech, 57% of the total comments in Birch and 47% each of Alder and Cypress Classes total comments.

Figure 4.2 The types of teacher language used in the classroom



Instructions showed a bigger range with four being used in Birch Class, 12 in Alder Class and 14 in Cypress Class. Scaffolding language also varied with 13 used in Birch, 8 in Alder and only 7 in Cypress. The final group of language, other comments, including praise and incidental comments was 9 comments in Birch and 8 in Cypress but 32 in Alder.

In Birch there was the closest balance between questions 47% were open and 53% closed. In Alder 34% were open and 66% closed and the biggest gap was in Cypress where 23% were open and 77% closed. *Learn* was used by more children in Birch and Alder Classes where more open questioning techniques are used. It may be that the use of open questions promotes the use of terms such as *learn,* but there is no conclusive evidence.

Looking at the analysis of the *learn* comments 47% came from Birch Class. Teacher B (Birch) used more scaffolding comments than instruction, whereas in Cypress Class Teacher C used more instruction than scaffolding. The language used by Teacher B often repeated or rephrased the children's answers reinforcing or extending the teaching.

Vignette 4.4 Teacher B and a conversation about sounds

Teacher B was working with a group of children and a set of instruments that they had sorted into a group that made loud sounds and those that made quiet sounds when hit with a beater. She had been leading a conversation about vibrations as the children felt the drum after it had been hit and noticed the vibrating movement. This was new language to

the children and when the children answered Teacher B's question about what happened when they felt the drum they talked about it going up and down. Teacher B spent a couple of minutes rephrasing the answer for them so they were using the new vocabulary she had introduced. The children left the activity using new vocabulary and having an understanding about what it meant.

In Cypress where more instruction was used there are fewer examples of this method of moving learning forwards. Teacher C used questioning techniques in teaching but 77% were closed and she did not scaffold in the same way when given an answer. She also used more instruction, the children were clear about the expectations of them by their teacher, but in a very direct way and they did not always have the opportunity to extend their learning in the same way as Birch Class.

Learn was used by more children in Birch and Alder where more scaffolded comments are used. It may be that the use of scaffolded comments promotes this language but, again, there is no conclusive evidence.

One conclusion that can be drawn from these analyses, is that differences in the language the adults use impacts on the language the children use, as well as their understanding of specific concepts. However, the differences in language do not appear to have an impact on the Cognitive Development of the children in terms of children achieving a 'Good Level of Development' (11 points) in all the EYFS Key Areas of Learning and Development at the end of

FS2. In total 47% achieved this level, 54% of the children in Cypress Class, 50% of children in Alder Class and 43% of Birch Class. Of these children only one was on track to make Expected progress to this level according to the 'Baseline' data. This would suggest that there has been good progress across the academic year.

These observations are a snapshot of the adult language used in the classroom and it is impossible to deduce from them whether any use of language which specifically mentions learning, is part of the children's everyday experience. However, one finding from these observations is that the teachers use questions and scaffolded comments to move learning forwards and the school data shows that these are successful strategies. However, the term *learn* does not appear in any of the observations so is unlikely to be part of the children's everyday language.

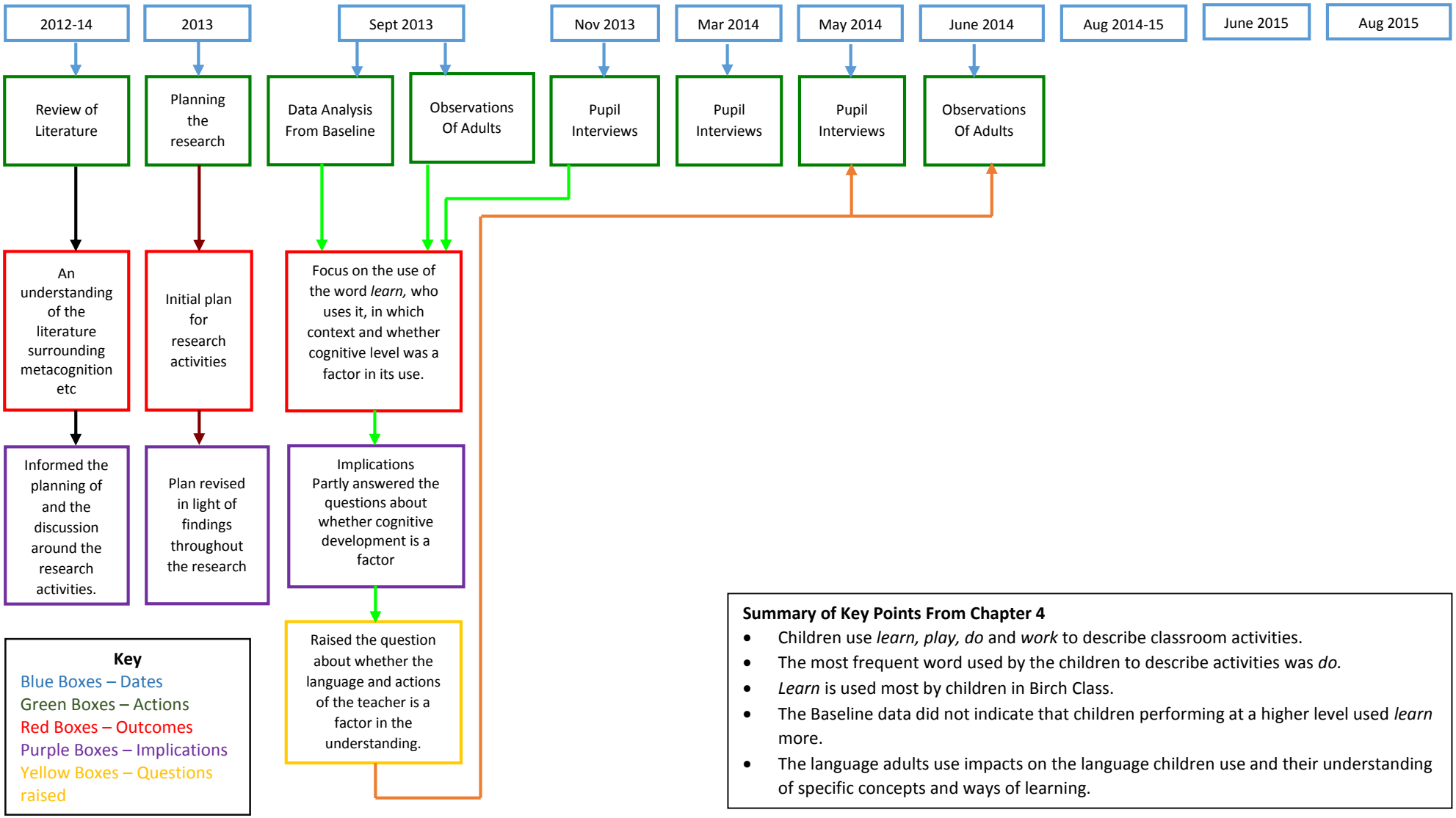
It cannot be proved that use of the terms *learn, play, do* or *work* by individual teachers impacts directly on the use of these words by the children, although the way teachers use language may impact on how children develop different ways of learning.

The language the teachers used was only one factor influencing how the children talked about what they do. Chapter Five considers what adults did within the classroom which might have impacted on how the children talked about what they were doing.

Section 4.7

The Research Journey Part Three

Figure 4.3 The Research Journey Part Three



Summary of Key Points From Chapter 4

- Children use *learn, play, do* and *work* to describe classroom activities.
- The most frequent word used by the children to describe activities was *do.*
- *Learn* is used most by children in Birch Class.
- The Baseline data did not indicate that children performing at a higher level used *learn* more.
- The language adults use impacts on the language children use and their understanding of specific concepts and ways of learning.

Chapter Five

Where Do You Learn and Play?

5.1 Introduction

During the analysis of the Pupil Interviews one of the questions that was raised was whether, or not, where adults base themselves in the classroom impacts on the language children use about that area.

5.2 Where do Adults Base Themselves in the Classroom?

5.2.1 Pupil Perceptions

During each interview the children were given a set of photographs, but were not directed towards any particular photos. Looking at all of the pictures the children were asked: “Where does your teacher go in the classroom?” Often the answer included what the teacher did in the area. If not then a follow up question was asked regarding the activities adults did in the area of the classroom shown in a picture. Their responses were allocated to one of four groups;

Working with children on a task.

Management activities for example ‘helps us to tidy up’, ‘she would take a picture’.

They don’t go there at all.

No comments on that particular photograph.

Collectively the children identified two main areas where their teachers go and ‘do’ activities with children: the Writing Area and the main Carpet Area.

When shown the picture of the Writing Area all of the children identified this as an area where their teacher based themselves. The comments they made about this area seemed to demonstrate that they understood this is an area where the teachers focus on structured activities. Examples of the children's phrases include:

Telling us how to do words

Teacher A decides what work goes here.

A teacher will help.

Teacher A chooses writing because it is very good.

The main Carpet Area, where the children sit for register, whole class input sessions and for small group sessions, was identified by 100% of children who commented on the picture (19 children), as a place where adults go in the classroom. Although there was a range of answers, a number of children identified this area of the classroom only with *learning sounds* (Phonics).

This raises an interesting question as to whether the teachers are clearer about phonics sessions being *learning* than they are about the other Foundation Stage Areas of Learning and Development. It also demonstrates that children copy the language the teachers use, as 'phonics' is not likely to be a word they will have used before coming to school.

Vignette 5.1 Alesandro talking about Teacher C

Alesandro, a member of Cypress Class, when asked to tell Eddie where Teacher C went in the classroom chose the picture of the Carpet Area. He told Eddie that:

'Teacher C goes here to turn the computer on, do the register, phonics, and sounds'.

He looked at the picture further but even with a follow-up question did not associate this area with any other teacher-led activity.

The other finding was that, when children talked about sitting on the carpet doing an activity, 33% (7 children) clearly identified the activity as *learning*, while others described the Carpet Area as a place where children are given instructions or have to listen to the teacher and other children.

Vignette 5.2 Joanna talking about Teacher C

Joanna, a child who uses the term learn *in other contexts, chose the picture of the Carpet Area. When asked if her teacher went here she replied*

'Yes – chatting about people who are really good at their writing'

Despite knowing and using the term *learn* appropriately in other contexts, she does not use it when talking about the Carpet Area. She, like many of the other children, did not see teacher-led activities in this area as *learning,* although I would have identified them as such in an observation. It may be that had

Teacher C used different language about the activity Joanna would have understood the purpose of the activity differently.

Looking at the remaining areas 63% (12 children) of the children who commented on the photograph of the Computer Area identified it as an area where adults went. However, twice as many said that this was either to deal with technical issues, or to do their own work, than said it was to focus on an activity with children. Only one or two children in the group identified the Role Play, Small World Play and the Creative Areas as areas where adults base themselves.

Vignette 5.3 Kelly talking about Teacher A

> *Kelly, a member of Alder Class, chose the picture of the Role Play Area which at that time was set up as a Bike Shop.*
> *When asked if her teacher went to this area of the classroom her response was,*
> *'No because she is busy doing other things.'*

Surprisingly, 47% (9 children) of children who commented on the photograph of the Construction Area identified it as an area where adults go, but on further questioning it was found out that this was only for management activities, such as taking photographs, dealing with problems or telling the children to tidy up, rather than to support learning in any way as described by the children.

5.2.2 Classroom Observations

In order to compare the children's perceptions of what happens in their classroom with actual adult movements, 13 ten to fifteen minute observations took place in the three classes at different points over four days. The researcher noted where all the adults were in the classroom at each point during the observation, and whether they were leading an activity, supporting learning in one of the areas, or dealing with a management issue.

The nine adults (teachers and teaching assistants) observed over the 13 sessions were plotted 45 times in total. 27% of these individual observations showed the adults were in the Writing Area. The other three main areas where adults were observed were the Carpet Area, the Creative Area and doing 'Table Top' activities. These three Areas accounted for 16% each of the observations made. Only a quarter of the total observations were made in the other seven areas, with the Role Play Area being the most significant at 6%. There were also areas where the adults did not go at all during the observations including the Small World Play Area (dolls' house/farm/road mat).

5.2.3 Correlation Between the Children's Perceptions and the Classroom Observations

The correlation between the children's answers in the interviews and the observations of the adults, confirms the children's view that adults spend their time on 'Table Top' activities, including Writing, and in working with children on the carpet. However, it is interesting that whilst 16% (8) of the observations show teachers focusing on practical cutting, sticking and painting activities, the

children do not report that to be the case when talking about their teachers. This appears to be the only anomaly; in all other cases the observations of the adults support the children's views of where the adults go. There were no significant differences between the classes, although the adults in Birch Class were observed in a much wider range of areas than those in either Alder Class or Cypress Class.

5.3 Will Eddie be Playing or Learning in this Area of the Classroom?

The children's responses to the pupil interview question 'Will Eddie be playing or learning in this area of the classroom?' were analysed. Photographs of the following areas were shown to the children: The Computer, the Role Play Area, the Writing Area and wall, the Creative Area, the Small World Area, the Construction Area, the Book Corner and the Carpet Area.

It is interesting to note, reflecting back to Chapter Four, that when asked more specifically whether Eddie would be *playing or learning* in a particular area of the classroom the children sometimes used those words to answer, having had them modelled in the question. Most children, when asked a direct question using the language *learn* and *play,* used the terminology as two separate items. However, they did not always demonstrate clearly that they understood the difference.

One hypothesis could be that the word *play* is much more common because parents will have used it frequently for a wide variety of different tasks and activities. Some children use the word *play* in a context of a fun or unstructured

activity, others the playing of a structured game and some use it as if it is a word to describe ‘doing something’ with toys, paints, etc.

As detailed in Chapter Four when telling Eddie whether you could *play* or *learn* the children often described the activities using specific activity-related vocabulary such as ‘painting’ or ‘writing’ and the terminology *play* and *learn* were used far less frequently.

5.3.1 Areas of Provision Where *Learn* was used

For the eight identified areas of the classroom talked about by the children in response to the question about Eddie *playing* or *learning* in a particular area of the classroom, all of them had at least one comment relating to *learning*. In Birch Class *learning* was referred to most frequently in respect of the Creative Area, in Alder Class the Carpet and the Computers were the most common, but there was no significance to any area mentioned in Cypress Class. Across the three classes *learn* alone was used for the Writing Area and the Book Corner. In all other areas both *play* and *learn* were used.

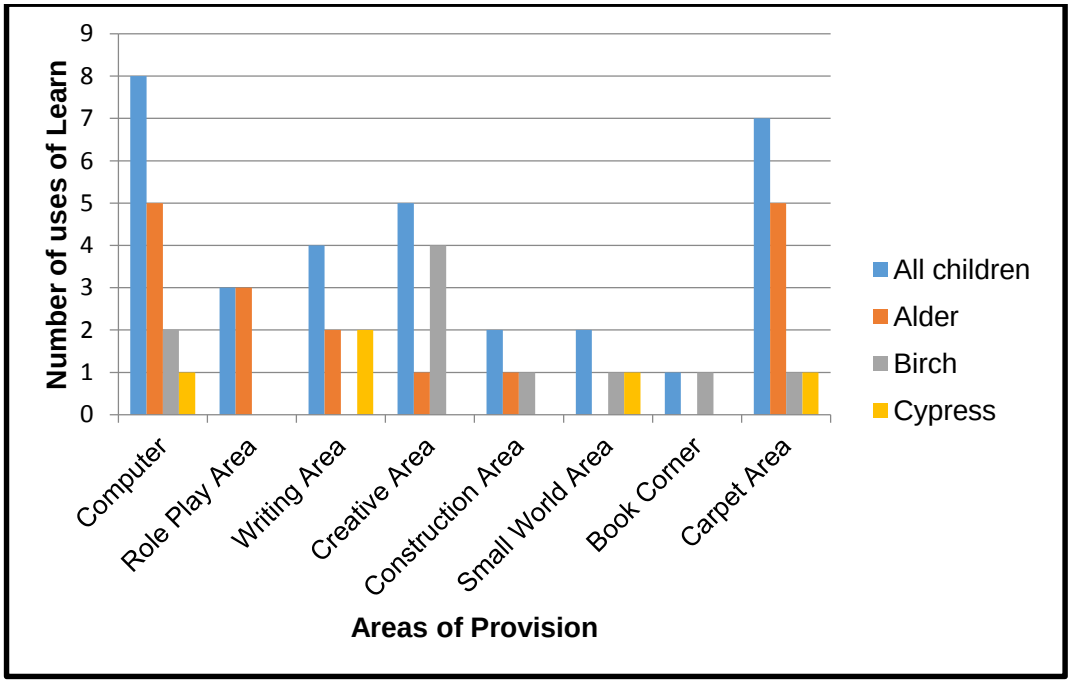
The analysis of the observations showed that most structured activities took place in the Writing Area and that adults spent a considerable amount of time there (19 observations); there are four mentions of *learn* related to this area in the pupil interviews. Some children appeared to make a link between activities that were structured in this area and *learning*.

Vignette 5.4 Matthew talking about *learning* in the Writing Area

> *Mathew, a child in Cypress Class, when looking at the picture of the Writing Area told Eddie that he would be learning. He would be, 'Writing a sentence, you need to use finger spaces, full stops and capital letters.'*

However, most comments using *learn* in response to the question 'Will Eddie be *playing* or *learning* in this area of the classroom?' (of which there were 8 comments in total) related to the use of the computers. Activities with the computers were 60% structured, but there were only two observations of adults in this area. This might be because the nature of structured activities on computers means the children's learning is moved on as part of the program and that might mean adults need to be there for less time because of this.

Figure 5.1 The Areas of Provision where *learn* was used to describe activities



One hypothesis from the above analysis could be that the structured nature of an activity leads the children to use *learn*. However, this is not always the case. In Birch Class it was the Creative Area where most comments regarding *learning* were made. The majority of the activities in this area were unstructured, although adults were present on three of the four occasions the area was observed. Therefore another hypothesis could be that it is the presence of adults that denote to children that *learning* is taking place. One example of this is the Role Play area where no structured activities were recorded. Five observations were made and adults were observed there three times supporting learning through playing alongside the children or asking questions to move learning forwards. Three children commented that Eddie would be *learning* in this area of the classroom.

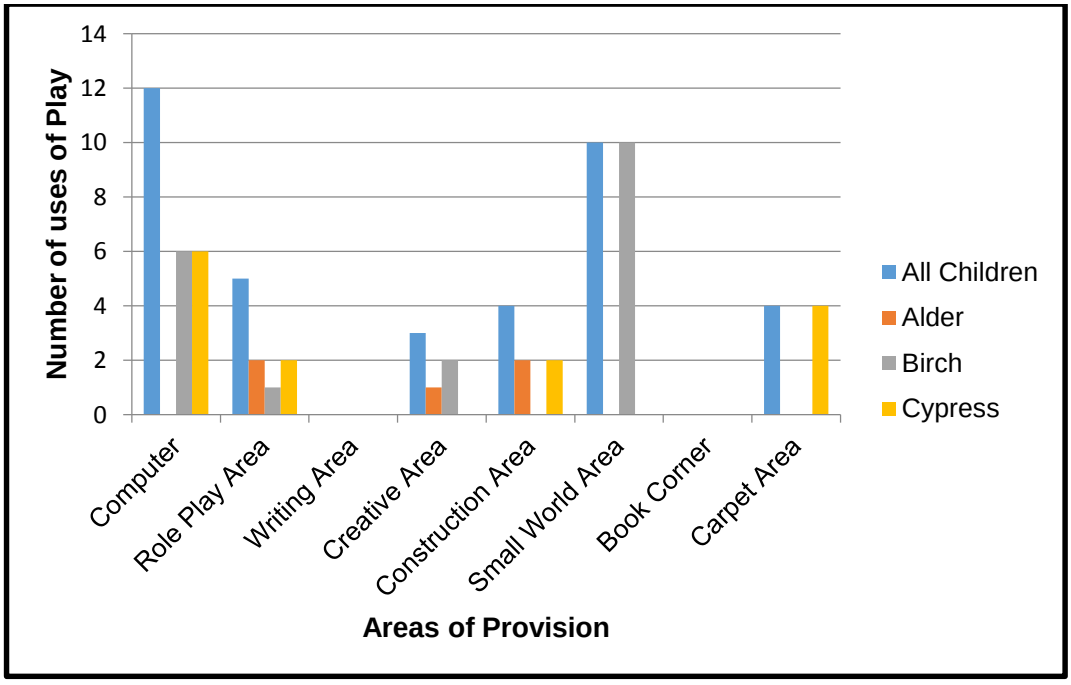
Alternatively it could be whether the children think of particular activities as child-controlled or adult-controlled that prompts the use of the word *learn.* However, this is not always the case. In nearly all observations the Writing Area was controlled by an adult, either because of their presence or because of the very specific instructions about what is to be done in the area and yet *learn* was used the same number of times as for child-controlled activities in the Construction and Small World Areas.

5.3.2 Areas of Provision Where *Play* was used

Whilst there is no conclusive evidence for the use of *learn* in terms of adult input, the children were more likely to tell Eddie that one *played* in areas where adults appeared to have very little input. The two areas where this was most

obvious across the three classes were the Small World Play and Construction Areas and the Computer Area. For the first of these areas *play* was used as a term on 14 occasions and adults were observed only twice. Interestingly the computer area also features here despite having the second highest use of *learn.* It also has the second highest use of *play* with 12 uses of the term. Adults were only observed here twice. The Computer Area presents an area where children perceive two very specific activities. They probably use *play* because of the language used by parents for example 'Go and play on the computer for half an hour' but are also aware that you can find out or *learn* new knowledge from the computer, probably also as a result of adults drawing their attention to interesting internet derived facts.

Figure 5.2 The Areas of Provision where *play* was used to describe activities



5.4 Do Adults Focus More on Structured or Unstructured Activities?

The next analysis considered whether the type of activities in each of the areas dictated where the adults spent most of their time. During the observations it was noted the activities in each of the identified areas were structured or unstructured. Structured activities included a focus task being led by an adult, a specific task that was required to be completed in an area, or structured by the resources provided in an area.

Across the three classrooms structured activities took place in the Creative Area, in the Writing Area, at classroom tables, on the Carpet and in the Role Play Area. The balance of time spent by adults in structured and non-structured areas was analysed. 67% (39) of the plotted observations show adults in areas where structured activities were taking place. In Alder Class the adults were observed working with structured activities for 72% (10 observations) of the time and in Cypress Class for 80% (12 observations) of the time, but in Birch Class only 46% (6 observations) of the time.

Adults in Birch Class were as likely to spend time on unstructured activities as on structured. This raises the question as to whether there is a difference in the children's perceptions between the three classes of the importance of these areas and whether or not they associate them with *learning* or *playing*.

5.5 Conclusion

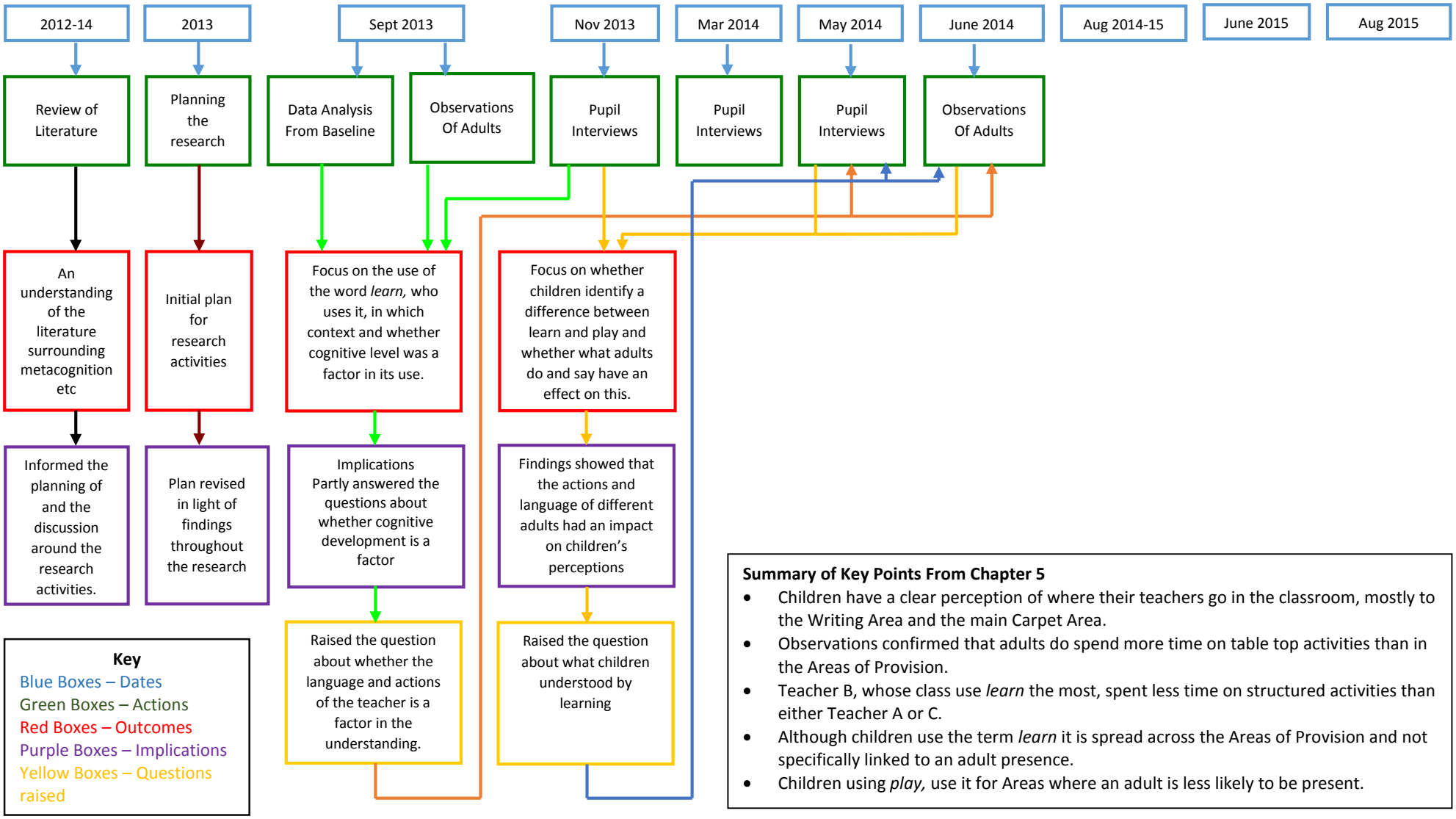
There does not appear to be a clear link between any classroom area and the children's perceptions of *learning*. Different classes talk about *learning* in

different areas and there is no direct link between those comments and whether the activities were structured or unstructured. Even where writing is so clearly an adult focus, and often structured, only 13% of the use of *learn* relates to this area of the classrooms. However, there is a clearer link between the use of *play* and the number of times adults are observed in those areas. There are also fewer structured activities linked to the Small World and Construction Areas where *play* is used most frequently although this does not hold true for the Computer Area for the reason set out above.

Section 5.6

The Research Journey Part Four

Figure 5.3 The Research Journey Part Four



Summary of Key Points From Chapter 5

- Children have a clear perception of where their teachers go in the classroom, mostly to the Writing Area and the main Carpet Area.
- Observations confirmed that adults do spend more time on table top activities than in the Areas of Provision.
- Teacher B, whose class use *learn* the most, spent less time on structured activities than either Teacher A or C.
- Although children use the term *learn* it is spread across the Areas of Provision and not specifically linked to an adult presence.
- Children using *play,* use it for Areas where an adult is less likely to be present.

Chapter Six

A Concept of *Learning*?

6.1 Introduction

This strand of the research focused on whether the children had a concept of *learning,* regardless of whether they used the term or not. The analysis of all the observations and pupil interviews showed that in relation to an understanding of the concept of learning:

> The children who used the word *learn* applied it to a skill whose acquisition had a beginning and an end, rather than an ongoing learning process.
>
> Some children appeared to have no concept of the difference between playing and learning.
>
> Some children clearly understood that writing gives an activity some status, *learning* to some of them, and because it goes on the wall, clearly something of which to be very proud.

The evidence for this was taken from all the pupil interviews and observations discussed at length in Chapters Four and Five.

6.2 What the Children Understood by *Learning*

6.2.1 Learning as 'Know-How'

The evidence collected seemed to indicate that where *learn/learning* was used by the children, it was often about the acquisition of short, clearly defined skills, for example learning to paint something specific. This might be defined as 'know-how'. An example of such a specific skill is as follows:

Vignette 6.1 Erin talking to Eddie about the Painting Area

> *Erin was looking at a photograph of the Painting Area and was talking to Eddie about what he might do. She could see a painting on the easel and commented, 'We needed instructions to get things right. One day I learned to paint the sky. I thinked in my head and did a space rocket very neatly'.*

Erin used the word *learn* appropriately and understood there was a process there. She needed instructions which she put into practice. The 'task' however had a finite beginning and an end. Once completed she understood that she had *learnt* a skill, put it into the past tense in her comment and could remember doing it as the interview was not on the same day that the painting had taken place.

Another example of this was the use of *learn* in relation to games on the computer. Again the task has a beginning and an end; a child will either be able to play the game or not, if they haven't learnt it.

Vignette 6.2 Liam talking to Eddie about the computer

> *Liam was talking with Eddie about the picture of the computer. His comment was that on the computer you 'learn the games to play them'.*

He used the word *learn* in a context that could indicate that he understood that in order to play a particular game there is a procedure to be followed, or a skill that must be perfected. There is however, an indication that this process has both a beginning and an end in that once *learnt* he could play the games.

In total 13 comments were made that could clearly be linked to the acquisition of skills, whether that was *learning* how to build a wall, to say a particular sound, or to write letter shapes. The children demonstrated a clear sense of achievement in being able to do something they could not do previously.

6.2.2 Learning about Something

There were nine comments that specifically related to gaining some type of knowledge. These were generally phrased, as were the skill based comments, in terms of *learning* about something such as specific new facts or something more general such as *learning* about money.

Vignette 6.3 Georgia explaining 'Playing and Learning' time

> *Georgia when explaining to Eddie about 'Playing and Learning time'*
>
> *'it's when you go and play and learn new things – we are learning about dinosaurs. Teacher S taught us'.*

Here Georgia indicated that she understood one can *learn* about things and that factual knowledge can be imparted by someone else. She is the only child who used the word taught alongside the word *learn* at any part during the observations.

6.2.3 Other uses of *Learn*

The remaining comments that used the word *learn* cannot be clearly related to *learning* a skill or about *learning* something, as it is unclear from the children's language in which context, if any, they were using it. It may be in these comments the children understood there is a word *learn* but did not have a secure enough understanding of the concept to use it accurately. Alternatively, they may, at that stage of their development, have understood it, but without further information from observations of actions or words an accurate analysis cannot be made.

When talking about reading with Eddie there did not appear to be an understanding that *learning* to read was *learning*. In these pupil interviews the children brought their own reading books to the researcher who was with Eddie. They read their books to him and were asked the question 'How will Eddie know he is ready for a reading book?' This was rephrased if it was felt that the children needed help understanding the question to 'When were you ready for a reading book?' or 'When were you ready to move colours?' (reading scheme levels).

Only one child used the term *learn* in the reading activity which seems to be referring to the process of decoding. He made two comments relating to learning, '*He needs to learn letters'* and the second a more general comment '*Mummy helped me to learn all by myself'.* The first comment indicates an understanding that Eddie will have to learn his letters before being able to read. This could be related to the 'know-how' category in the sense that he will need to *learn* how to recognise the letters and to *learn* the sounds they make. The comments from the other children in this activity often showed a belief that they are naturally good readers and give no indication that they have gone through any process to get there.

Some terminology the children used implied that reading is not just something that simply happens, but you have to practise/get good/remember words, but generally they talk about moving through the coloured levels of books, or report that their teacher says they are good at reading.

This seems to back up the children's understanding that skills have a beginning and an end; you generally do not learn to read in one day or a week.

6.3 Playing and Learning

It was important to find out if the school's use of the term '*playing and learning*' impacted on the understanding of the two as separate concepts. Previous observations seemed to show that, for some children at least, it was simply a phrase indicating that they could go to the areas in a free flow session. There were seven uses of *'playing and learning'* by the children in activities where they

were not asked direct questions about whether Eddie was *playing* or *learning*. In all cases the children were talking about 'Free Flow' sessions in the areas of provision. As there were so few comments using the term it is difficult to make any generalisations about their understanding of the two separate concepts from this analysis.

By asking the children whether or not Eddie would be *playing* or *learning* in each area it was hoped to get some responses to see whether the children could differentiate and therefore illustrate an understanding of the concept of *learning*.

As has been described in all Strands, some children gave clear indications about their view of what constituted learning, but others were unable to do so. Looking at the language children used in this activity, ten out of the thirteen children showed some understanding of the concept of *play.* In four instances that is the only word they use (from *playing* and *learning*), but it is distinct from the use of *do*. In the activity where the children were asked whether Eddie would be *playing* or *learning* in an area there were comments relating to *playing with something*, *playing something* and others that just used *play* as part of the answer without a clear link to the two other categories. Of the comments 27% (7 comments) related to the former where children described *playing* with something, 46% (12 comments) described *playing* something (including games and 'Batman') and 27% were more general. In the same way that the more general *learning* comments cannot definitively be linked to an understanding of the concept *learn*, the same applies to the *play* comments. Without further

action or explanation on the part of the child it cannot definitively be stated the child making these comments understood a concept of *play* as being different from *do* or *learn.* One comment about painting indicates an interesting view point.

Vignette 6.4 Bridget talking about the Painting Area

> *Bridget, when looking at the picture of the painting area comments 'Playing here because painting is fun. It doesn't feel like I'm learning'.*

It would seem this child understood the concept that she was *learning*, but because she enjoys painting it doesn't feel like *learning*. This is probably the most sophisticated comment made by any child. This comment may indicate that Bridget finds *playing* enjoyable on the whole, but finds *learning* sometimes tedious or dull.

6.4 The Status of Writing

During the pupil interviews when the children were telling Eddie about the Writing Area and Writing Wall there was a very clear, and frequently stated, opinion that Writing was important. Even those who did not use *learn* as a term in this area demonstrated that, in their view, Writing was important and different from other things they did in the classroom. Comments relating to this area of the classroom were either about *learning* or the importance of Writing. The children clearly saw the value of Writing and often mentioned the teachers in the Writing Area, as part of their answers. Unlike with Reading the children could see they could *learn* to write. One hypothesis is that at this age as long as

the marks on the paper make sense to the child they have a belief that they can write. They are often more competent writers before they begin to read. The children in the cohort began FS2 with an average of 7.3 points in Writing and only 6.2 in Reading. In the activity asking if Eddie was *playing* or *learning* in this area of the classroom four of the 11 children who chose that photograph said that you *learnt* at the Writing Area. No one used the term *play* for this area of the classroom. Seven comments related to writing being good or special. The fact that there was a wall where teachers displayed children's writing gave it high status in their eyes. Seven children made comments that the teacher put their work up on the wall. Of all the areas discussed there were more mentions of the teacher spending time in the Writing Area than anywhere else.

A comment by Mathew (see Vignette 5.4) indicated he understood what made writing good. He was able to remember what his teacher had told him, *"Writing a sentence you need to use finger spaces, full stops and capital letters."* This was one of a very few comments which demonstrated that a child knew they had to *learn* certain things or perhaps acquire certain skills to achieve successfully. It is another example of the 'know-how' category of *learning*.

The comments relating to the Writing Area are summed up in the following vignette:

Vignette 6.5 Alison talking to Eddie about writing

Alison's response to 'Will Eddie be playing or learning in this area?' was 'Learning, because there is so much writing, you need to learn to write so mummy knows what you are doing.' In answer to a follow up question asking what do you have there? 'Papers – people have to write on them. If they are good Teacher A puts them on the wall'.

The one issue that did come up particularly in regards to the language used by the adults in this and other teacher focused areas was whether the teacher's language inhibited the understanding of *learning*. One child commented that the Teacher A 'calls people to do special jobs'. There was no indication of any link between these special jobs and learning even though the special jobs were actually focused and structured teacher led activities and, very often, involved writing.

6.5 Conclusion

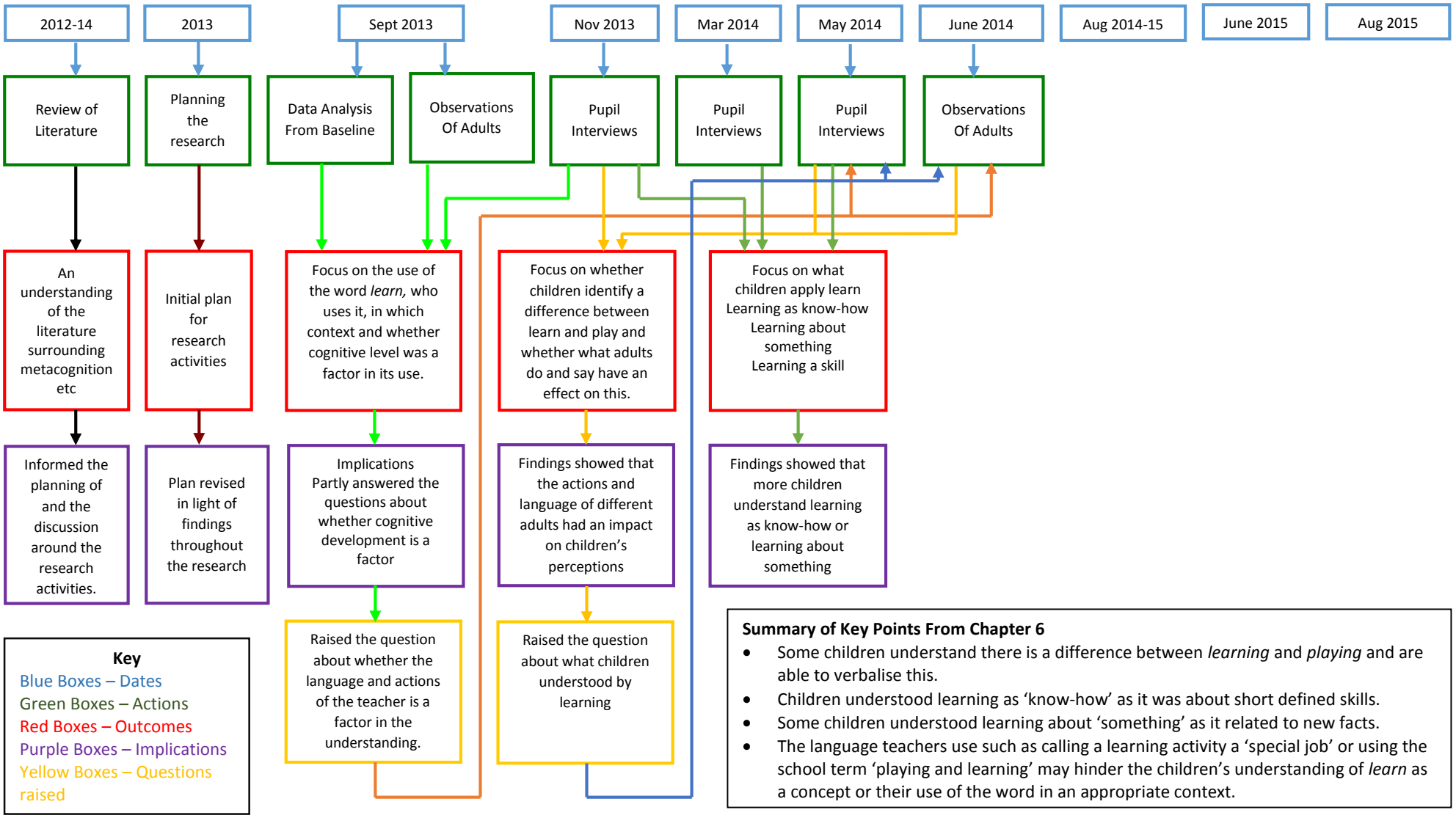
Some children understand that there is a difference between *learning* and *playing* and are able to verbalise this. More children understand the 'know-how' and 'learning about' aspects of learning. Here there is a start and a finish to what is learnt and they are clearly aware of new skills or facts. However, the more complex understanding of learning as a process or ongoing concept is only at the very early stages of development. Very few children were able to verbalise clearly this deeper level of understanding, although Bridget's comment above indicates that she may understand there is a deeper level.

The comments relating to *play* that were made clearly demonstrated that the children understood the concept. They were all related to activities we may traditionally described as *playing*. It needs to be remembered however, that *learning* can take place through *play* and that the teachers' intention for the various classroom activities may actually have been specifically related to *learning*. On the whole the children did not use comments that indicated they are aware of this. This raises the question that if the teachers changed the language they used would this become more evident?

Section 6.6

The Research Journey Part Five

Figure 6.1 The Research Journey Part Five



Summary of Key Points From Chapter 6

- Some children understand there is a difference between *learning* and *playing* and are able to verbalise this.
- Children understood learning as 'know-how' as it was about short defined skills.
- Some children understood learning about 'something' as it related to new facts.
- The language teachers use such as calling a learning activity a 'special job' or using the school term 'playing and learning' may hinder the children's understanding of *learn* as a concept or their use of the word in an appropriate context.

Chapter Seven

Discussion and Summary of Findings from Chapters Four, Five and Six

7.1 Introduction

The aim of this Chapter is to bring together the findings from Chapters Four, Five and Six, to examine what has been found out and to see whether the original research questions have been answered.

Chapters Four, Five and Six seek to create a picture of a child's experience of learning in a Foundation Stage Class in an English Primary School, particularly with regard to the children's understanding of the activities they undertake. The children's perception of the role their teachers have within the classroom is also considered along with an assessment as to whether the differences in the cognitive development of the children, combined with the teachers' use of language and their actions, have an impact on the children's understanding of themselves as learners.

At the outset of the classroom research, my purpose was to consider the development of metacognition in young children, who might not have the language to explain their own understanding. Having completed the initial observations and interviews with children, I found that it is not only their spoken language which limits young children from demonstrating their understanding of different concepts. The environment, and most importantly the teacher with whom they work, can make a significant impact, not only on the academic progress they make, but on the more fundamental understanding of skills and

knowledge that will help them to make better progress in the later years of Primary School.

Whilst the focus of the research was talking to children, and then listening to and observing adults to see if the classroom observations confirmed what the children said, the following areas are clear when the findings are taken as a whole.

7.1.1 The Children's View of their Classroom

Firstly, talking to and observing children within a classroom situation confirms that, even in the Foundation Stage, they have a view of how their classroom works, and what its purpose is, what adults there say and do, and whether implicitly or explicitly they have an understanding of what they perceive adults think is important. However they express this, and what level of scaffolding is required to support them, and regardless of whether they have the language of learning or not, the majority of children believe that the Writing Area is more important than the Doll's House. This view is reinforced by the fact that the teacher does not spend time in the Small World Area, but does spend time with groups in the Writing Area; photographs of Small World play do not adorn the walls of the classroom, but examples of writing do. The Doll's House is not a 'special job' whilst Writing is given this status.

7.1.2 Differences Between Practitioners

Secondly, in the findings of the study there are differences between practitioners. Different teachers do different things that have different impacts

on the children in the classroom. Whether it is the language they use, the types of support for learning they provide, for example scaffolding or questioning, where they go in their classroom and what they do when they are there, are factors which cannot be ignored in the development of the children. Whilst the differences in the findings are not huge, and the cognitive development of the classes at the end of the year is similar, there is a difference which, if exploited, could have a positive impact on children's view of their own learning. Teacher B, in comparison to Teachers A and C, most often showed behaviour which linked to findings that give the greatest insight into how the children think. With regards to the language of learning she used more open questions and scaffolded learning more and visited more Areas of Provision than Teachers A or C. Her class, Birch Class, used the term *learn* slightly more than Alder Class and significantly more than Cypress Class and she spent nearly as much time on unstructured activities as on structured activities in the classroom. Whilst a direct link cannot be made between these findings and the children's understanding, it could be argued that her teaching methods have impacted positively on Birch Class' development towards aspects of metacognition, namely aspects of their academic development.

7.1.3 The Link with the Children's Cognitive Level of Development

The study used the 'On Track' (2012) Assessment to provide a 'Baseline' of the children's attainment on entry to FS2. A score was given to each child and the average calculated for the cohort as a whole. The analysis of the research findings (see Table 4.1) show that in terms of the children who use the term *learn,* there was very little difference between the number of children who

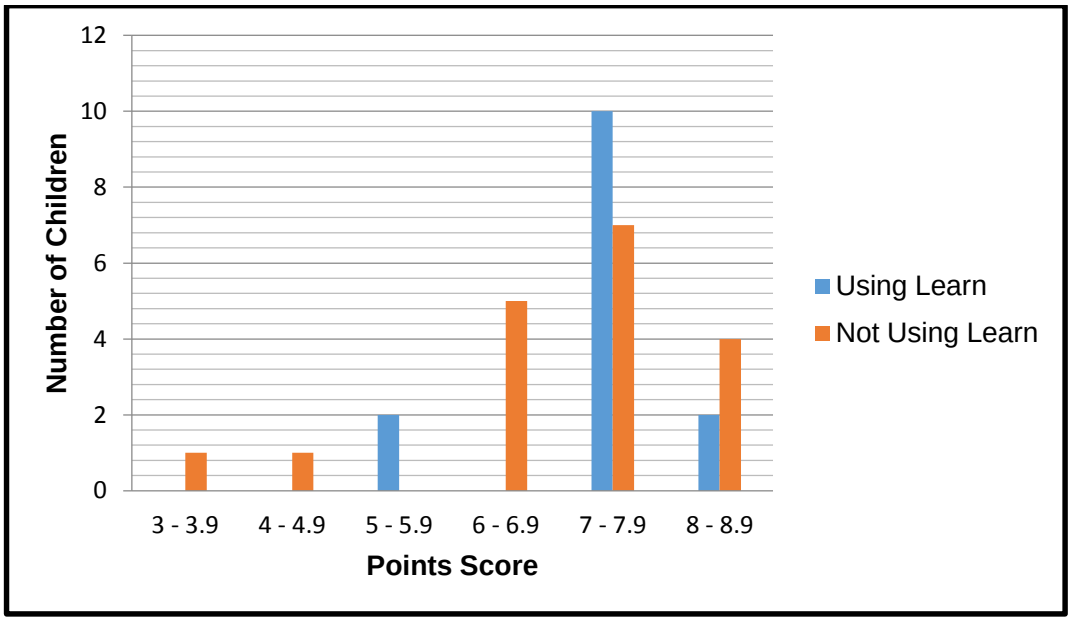
scored above the cohort average of 7 points (6 children) to those who scored below (5 children). The difference was slightly larger for those who did not use *learn.* This did not seem to indicate that, in terms of overall baseline assessment across all areas, there was anything significant which linked higher attainment to the use of *learn*. Consequently, it was decided to look at the individual areas, which contribute to the 'Good Level of Development', to see if they might have had an impact on whether *learn* was used or not at.

The first area was Communication and Language Development. This Area of Learning and Development is concerned with spoken language, so the assumption was that those who scored more highly in this area, were more likely to have a wider vocabulary and, possibly, a more developed understanding of words. In terms of using *learn* the percentage of children scoring above the year group average of 6.5 in this area (who used *learn)* is greater than those who don't use *learn*. In addition the percentage of children scoring below 6.5 who do not use *learn* is greater than those at the same cognitive level who do (see Table 4.2). This finding would seem to indicate that there was a small difference between the cognitive development in the language of the groups, although the difference is not significant and could be due to chance alone.

The small differences in the Personal, Social and Emotional Development scores do not give any weight to the argument that cognitive development is significant in the use of *learn*.

Turning to more specific areas in terms of Reading, Writing and Maths, the children who use *learn* generally have a points score for each of these three areas that is slightly higher than those who do not use *learn*.

Figure 7.1 The average points score in the EYFS Areas of Learning and Development for Reading, Writing and Maths and the use of *learn*



It might be argued in these three areas that children with more significant cognitive development have higher scores. A difference can be seen, but in each case it is only a very small difference, equivalent to a half-term's development in each area. The only certain conclusion is that children who scored below 5 (equivalent to 22-36 months and below) in these areas did not use *learn* at all. One possible explanation is that children with a developmental age below 3 years of age are unlikely to use the term *learn* at all.

The following sections look more specifically at themes which emerged from two of the initial research questions.

- Do FS2 children understand the concept of *learn* and can they verbalise it?
- Are the language and actions of the teacher a factor in this understanding?

7.2 Do FS2 Children Understand the Concept of *Learn* and Can They Verbalise It?

7.2.1 The Words Children use when Talking About Activities

During the Pupil Interviews questions were asked to find out what language children use in the classroom to define the activities they take part in. The initial thinking was that in order to understand their own learning, children need to have a concept of what *learning* is. In order to ascertain this, the use of the children's language needed to be analysed. The activity, asking Eddie whether he would be *learning* or *playing* in different Areas of Provision, was designed to scaffold this discussion in order to see whether there was a common understanding of *learning* and *playing* amongst the children.

There was a very clear response to the first interview question with Eddie, 'What can Eddie do in the classroom?' Four words were used to describe activities: *learn*, *play, do* and *work*. In question two, where the question was restricted to 'Will Eddie be Playing or Learning in this area?', some children who had not used the *learn* or *play* in the first activity used the terms to describe

activities which I would have linked to a ‘traditional’ view of playing or learning, which suggests that they understood the concept, even if they had been unable to describe it without the language being scaffolded.

The questions that these findings raised were whether or not the use of *learn* was linked to the children’s level of cognitive development and, secondly, whether there was a link between the use of the term *learn* and the children’s school experiences, including the adults with whom they work.

7.2.2 Which Activities do the Children Apply *Learn* to?

Of the 30 comments where the children used *learn* in the interviews, the overwhelming use of it was in learning a skill, the *know-how* concept. This would suggest that children at this stage of development can understand that there are activities that they couldn’t do and now can. This links back to Esbensen et al’s (1997) research using ‘zwibbing’. Here some children understood they had learnt a skill. Some children in this study understand that they have learnt something new. The other comments related to ‘learning facts about something’. All the children talked about learning being something with a beginning and an end. This might be termed ‘episodic learning’. There was a distinction between these type of activities referred to as *learning* and some other activities referred to as *play* by some of the children. When talking about Areas of Provision in the classroom, the term *play* referred to ‘playing with a toy’ or ‘playing a game’. On the whole these comments seem to indicate that *play* is activity driven.

Vignette 7.1 Kelly and Bridget talking to Eddie about the Small World Area

There was a picture of the Small World Area in Alder Class in the selection of photographs. Two of the children who picked up the picture to talk to Eddie about it made comments which seemed to indicate that the activities here were not about learning. Bridget (a child who frequently used the term learn in relation to other areas) told Eddie,

'You play here. You play stories.'

Kelly (an academically able child but one who did not use learn in her interviews) seems more concerned with the practicalities of classroom life. She told Eddie,

'Every time you go here there are four people.'

For her it would seem that the rule governing how many people could play in the area was the most important. She then used the term 'do' to describe what happened in the area.

There were similar comments for almost all of the Small World Activities: Doll's House, Pirate Ship and Dinosaur World. The comments given about all these areas are about a functional type of play; there is no indication of being able to develop a new skill, learn new vocabulary or embed new knowledge from this type of activity. Seventeen comments were made in response to these pictures all using, or implying, *play* or *do*.

7.2.3 What do the Children Understand by Learning?

Finally, the question 'What do children understand by learning?' was considered. As mentioned in section 7.2.2 the children at this time in their

development, link learning to *know-how*. They have *learnt* how to do something they couldn't previously do, or a fact they didn't already know. Comparing this, with the lack of comments made in terms of *learning* to read, gives a clear indication that they see *learning* at this point in their development as *episodic*, rather than an ongoing process.

7.2.3.1 Learning to Read

One question that arose from the Pupil Interviews was 'Why don't children see reading as learning?' when, the term 'learning to read' is used both by adults and children. Having analysed the responses to the reading question in the Pupil Interviews, the conclusion reached was that at this stage, learning is still about short tasks. The process of learning to read cannot be comprehended in the same way. It could be that the structure devised within a reading scheme is never explained to the children. Their comments seem to suggest they understand that you move through the bands as you get good at reading, but not how you get better, or that there are specific skills you need to learn. There was one comment made about learning sounds, but it would seem that generally the children are not aware of the many skills that make up learning to read. It is possible that should the skills be scaffolded by the adults for the children, they would see 'reading' as a group of learning tasks, rather than a seemingly endless process. By explaining what needs to be *learnt* in order to move from say, yellow band to blue band, the children might begin to use *learn* in this area, even naming the various sub processes.

7.2.3.2 Do the Children make a Distinction between Playing and Learning?

Some children who are using terms to describe activities, even where they don't make a distinction between *learn* and other activities, often make a distinction between *play* and *do.* This suggests that there is an awareness that the activities in classroom conform to several groups. As with *learn* being seen as *know-how* or 'knowledge of facts', *play* divides itself into 'playing with something' or 'playing something'. There is no concrete evidence in this study to suggest that using the word *play* links directly with an understanding of the concept. However, the activities that play is linked to, for example the Small World Area, and the fact that there are no mentions of *play* in the Writing Area could indicate that there is, in the minds of the children who used the word, a difference.

Looking at the range of language the children use, might help to establish some understanding as to whether the children differentiate between *do* and *play*. Of the 14 children who used *learn*, 12 also used *play* and seven used *learn*, *play* and *do*. Two children used *learn* and *do*. It could be concluded that the children who used *learn* and *play* and related these to different types of task could be said to make a difference between the concepts.

Of those who do not use *learn*, 12 used *play* and 10 of these *play* and *do*, again leading to a tentative suggestion that they do make some kind of distinction between what they perceive as play activities and other activities within the classroom. Only one child used *play* alone to refer to all activities and six used

do alone. This could indicate that as yet these seven children do not have an understanding that activities may have different purposes.

The area of the classroom where only *do* and *learn* were used was the Writing Area. The children who commented on this area did not regard this as an area in which to *play,* suggesting that they have a view of play that does not include focused writing. There were writing materials in both the Construction Areas and Role Play Areas but these were not mentioned specifically by any child. The importance the children perceive writing to have, because it is put on the walls by adults and read out by teachers, seems to have helped shape this view.

In contrast, the area where all four terms were used was the Computer Area. However, it is difficult to unpick the children's comments in any detail due to the terminology that is so often used for the children, by adults at home and at school, along the lines of 'go and play on the computer'. In a manner similar to the use of 'playing and learning' it is entirely possible that some children copy the phrase that is used to them by adults, without an understanding of what play might mean. Where children used *learn* it was in the context of 'learning to play a game' or 'learning facts', again fitting in the *know-how* and 'learning facts' aspects of *learn* that the children at this stage of development are using in other areas. The use of *work* was mostly directed at the teachers' own behaviours and activities and the perception seemed to be a computer was needed in order to do any *work*.

It is entirely possible that any single child's understanding of language, such as *play,* is different from both that of other children and the understanding adults may have. This is illustrated in the following example.

Vignette 7.2 Eleanor talking to Eddie about the Carpet Area

Eleanor, a child who uses the term learn*, was talking to Eddie about what happens in the Carpet Area of the classroom.*

Her response was somewhat unexpected

'Teacher C plays teachers here'.

This example serves to demonstrate that, although certain language is being used, an adult interpretation may not be the correct one. Various ideas were explored but the final conclusion was that Eleanor did not understand the concept of being a teacher. She had at some point understood, that when playing a game of schools, she was playing at being the teacher. It was therefore entirely logical to her that her teacher must also 'play teachers' when she sits with the class in that area of the classroom. In adult terms it would appear that she was using play inappropriately as her teacher was clearly the teacher doing the job and not playing, but her understanding of play is clearly different to that. It could be she is simply copying the language used to her, but it could also be that play, for her, also encompasses *work* or *do* or even *be*. It should therefore be remembered that each child may have their own developing understanding of the terms and therefore this should be regarded with caution when looking at extracts from interviews and observations.

7.3 Are the Language and Actions of the Teacher a Factor in the Understanding of *Learn*?

The language of the teacher became a focus after the children had talked about what they did in their classrooms. Early data analysis had shown that children in Birch and Alder Class used *learn* more than those in Cypress. Having found that the Cognitive Development level measured on the baseline showed very little difference between those children who used the word *learn* and those who did not, it was necessary to look at other factors. The children comprised a range of ability in each class, the classrooms were similar in the way they were used, the Areas of Provision were of the same type, so one tentative conclusion reached was that it must be the adults who made the difference. Although observations involved both teachers and teaching assistants, the vast majority of language used in teaching sessions was teacher-based; it was the teachers' language that was therefore the subject of the next element of the research.

A large percentage of the teachers' language in the classroom was made up of questions. One connection between the type of questions used and the use of *learn,* can be made. Where there were more open questions than closed questions, in Birch Class and to a lesser extent Alder Class, *learn* was used more frequently. However, in Cypress Class where there was a far greater use of closed questions there was a much more limited use of the word *learn* by the children. Whilst there is no evidence of a direct causal link, the fact that Teacher C uses a more closed question style means that there was probably less opportunity for the children to form answers which extended their thinking skills.

Vignette 7.3 Teacher C talking to her class

Teacher C was sitting in the Writing Area with a group of children in a semi-structured Writing Activity. The Activity was writing a report about a visit by other children to Cypress Class. She used the following questions with the children.

'What did you like Amy? What did you play with?'

'Can you remember what you played with?'

'What's the next word?'

'Can you write the ow sound?'

'Are you going to do a picture of a rainbow?'

'What colours will you use in your rainbow?'

'What's the last word?'

In this example, which is typical of the exchanges in Cypress Class, the children's responses are limited by the type of question. Nothing Teacher C said prompted the children to think beyond giving an answer which was yes or no, right or wrong. The teacher does not seek to extend the conversation in any way to extend learning. It seems functional, and in some respects, it is aimed at completing a task rather than extending learning.

Teacher B at a similar activity in Birch Class uses a different approach.

Vignette 7.4 Teacher B talking to her class

Teacher B is encouraging the children to describe a sea creature without naming the creature in their drawing and writing.

'Does it have legs?'

'You need to give me a clue?'

'Yours is a ……..just a minute I'm trying to guess. Tell me more?'

'Give us a clue?'

'Where would we find it?'

'Can you help me?'

'What is it then?'

'Why can't you tell me?'

Here Teacher B is focussing on the language development and, to a certain extent, the thought processes of the children. This class is used to having to develop their answers. The final question shows the resilience of the child who, even when asked a direct question, understands that they can extend the activity still further. Whilst these two examples do not relate directly to whether the teacher is using the language of *learn* in the classroom, they demonstrate that when children are offered different approaches to encourage aspects of learning behaviour they react in different ways.

The next area where a difference could be seen between the classes is the use of scaffolding to support learning. The understanding of Teacher B in Birch Class about how children learn through the scaffolding of their learning as seen in Vignette 4.1 in Chapter Four, is seen more often than in the other two

classes. However, the actual number of scaffolding examples is limited and it makes it difficult to draw a trustworthy conclusion about the impact on the language used. If Vignette 4.1 is taken as a typical example from Birch Class then there is a clear implication in the activity that new learning has taken place and this is rehearsed with the children at the end of the activity. In order to verify this, further examples would need to be seen and it would be necessary to talk to the children in the immediate aftermath of the activity, and perhaps later, to find out what their understanding was of what had taken place.

More direct instruction took place in Cypress Class; observing this activity the children seemed very clear about what they had to do.

Vignette 7.5 Teacher C talking with her class (direct instructions)

Teacher C was working with a group undertaking a phonics session. She was clear about what they were going to do and the session contained many direct instructions.

'Show me your thumbs'.

'We are going to write a sentence with a new digraph'.

'Write a bit bigger because I'm not going to be able to see that'.

'I want to see what you can do'.

'Wipe your boards clear'.

'You need to be able to sound the sound'.

Whilst this conversation was punctuated with some, mainly closed, questions (not noted here), in addition to the instructions, the number of direct instructions

left the children in no doubt as to what they had to do, but there was no indication from the teacher as to why she wanted them to do this.

Although no class is significantly better or worse as determined by the On Track Averages at the end of the year, it would seem that the aspects of scaffolding and open questioning, most common in Birch and less polarised in Alder, have a bigger impact on the children's language considered in this study, than the direct instruction and closed questions used in Cypress. We might speculate that it may be that if the level of direct instruction from Cypress was mixed with the scaffolding examples and open questions observed in Birch then the impact of all teachers' use of language could be enhanced further.

One thing that became clear was that the school's term *Playing and Learning,* which is used to describe the free flow time in the Areas of Provision, may have been causing a problem in some children's understanding. This term was devised initially in FS1 so that children did not always go home and report that they had merely played all day and it therefore gave status (to parents) to the activities that took place in the FS1 classroom. This phrase had migrated through to FS2 and continued to be used. Where children used it, it was possible that it was actually inhibiting their understanding of *learn* as a concept. It was often used as one single word. In 2014-15 it was removed as a classroom term to see if that made a difference to the children's understanding that there are different concepts of *playing* and *learning*.

The fact that, at no point, was any teacher observed using *learn* as a classroom term indicated it is probably not part of their general classroom language and therefore the children who use *learn* were not copying their teacher's language. It was more likely they used the term as part of their normal vocabulary and the context showed their own developing understanding rather than a word 'caught' from the teacher. However, as mentioned above it is very probable that the way their teacher uses language to support their learning was having an impact on the development of their spoken language in relation to *learn*.

7.3.1 Where do You *Learn* or *Play*?

This research question arose from the data collected in the pupil interviews. It became clear that it was not only what the adults said that had an impact on the responses from different children, but also what their teachers did and, where they positioned themselves in the classroom, which seemed to give status in the children's eyes to some activities, but not others.

7.3.1.1 Where do Adults Base Themselves and What do They do?

In the pupil interviews the children were asked 'Where does your teacher go in the classroom?' This was followed up with 'What do they do there?' if the information had not been included in the original answer.

The fact that most children identified the Carpet Area and the Writing Area as the two areas where adults go most was expected, because in some respects they are the places where teachers talk about activities the most. On the carpet the teachers lead whole class, or group, teaching but they also explain the

activities in the other Areas of Provision before the children move off to take part in them. From the observations it can be seen that the Writing Area is not just a place where writing is completed, but also the place where teachers called children to work with them on a variety of tasks. More often than not pen was put to paper in this area (even in Maths activities): in the children's view writing happened there.

Both the pupil interviews and the observations showed up some anomalies between what I had observed in the past and the children's viewpoint about what happened now. In this school it had always been emphasised to staff how important it was that teachers enhance and support the learning that takes place in the Areas of Provision. General classroom monitoring seemed to acknowledge that this was the case, but it was not until these research activities took place that it was clear that some teachers were not spending time supporting learning in the various areas and, often, their input was limited to management type interventions dealing with behaviour issues, tidying up and disputes. It would be an interesting further development of the research to establish how the teachers view themselves in relation to this.

The analysis of the interviews and observations showed there was not a consistent picture across all three classes about where adults base themselves.

An example from Birch Class shows an intervention in a semi-structured activity in an Area of Provision where learning was evident and clear.

Vignette 7.6 A semi-structured activity in Birch Class

Teacher B joined a small group of children in the cut and stick area who were making junk models. The activity was semi-structured by the resources available to the children. These were boxes, tubes, glue, scissors and sellotape. Some children were taking their models to be painted.

Andrew (a child with Special Needs both in terms of hand-eye co-ordination and significantly below average cognitive development) was making a model by placing boxes together but was upset because they would not stick.

Teacher B using a range of questions helped him to understand he needed to use either glue or sellotape to join them. He collected both but was unable to use them effectively. Teacher B scaffolded a session where he was helped to understand how sellotape worked i.e. it was only sticky on one side and that if you used glue it was important that you left the boxes to dry and set before moving them. A twenty minute session was observed with Andrew who, by the end of the time, had learnt a new skill and was able to apply this to further models.

Teacher B's actions in these classroom areas on semi-structured or free activity tasks, may again have had an impact on how the children in her class perceived their classroom activities and the language they used to describe them. In this class out of all the Areas of Provision it was the Creative Area where *learn* was used most. There was only one comment made using *learn* in the Creative Areas of the other two classes.

The comparison of the observations made of the teachers and their reported behaviour, when children were asked where their teachers go in the classrooms, showed only one anomaly and that was where the teacher was focused on practical tasks similar to those described in Vignette 7.5 . The children's perceptions were that the teachers do not place themselves in the Creative Areas, the Small World Areas or the Construction Areas, although 16% of observations place them there. This may be because it is more likely that the teacher is there supporting an activity chosen by the children, rather than one imposed on them. Their presence therefore is seen as someone working alongside the children, rather than someone who is directing or leading the activity and this is not remembered by the children because it does not impact on them in the same way.

7.3.1.2 Do Teachers Place Themselves more with Structured or Unstructured Activities?

The pupil interviews were also analysed to ascertain whether the teachers were focusing more on structured activities than unstructured, or semi-structured ones. If this was the case, did they take place in the Areas of Provision where teachers were seen, or perceived to be, most of the time? Observations of the adults' movements were made and activities in the classroom classified depending on their unstructured or structured nature.

In very simplistic terms, without considering the exact nature of the structured tasks, 67% of observations made showed adults involved with structured tasks. The fact that most structured activities took place in the Writing Area, and the

fact that *learn* was associated with this area, seems to indicate a link for some children. Indeed across the observations it would seem that the link between an adult's presence and mention of *learning* is connected.

Adults are less likely to be present when the word *play* is used, and the activities are more likely to be unstructured. This leads to a possibility that children are making a distinction in their thinking, if not in their spoken language, between *play* and *learn* and *do* and *work*. This might mean that if the children link *play* to a lack of adult input and structure then they do have an understanding that activities with more adult input and structure are not *play* and are therefore classified as something else. Even if they do not have the vocabulary to describe it, an understanding of more than one concept is present and this may indicate an understanding of *learn*.

7.4 The Importance of the Classroom Environment

The research question 'Which factors contribute to a young child's ability to learn how to learn?' has its roots in the desire to improve the learning experience for the children in the school. Bartsch et al (2003), Larkin (2006) and the C.Ind.Le project (Whitebread et al 2007) along with others, demonstrated that metacognitive skills could develop at an early age and, knowing the impact learning such skills can have at a later stage of school life, I wanted to find out what was important in the classroom environment to support this development.

The work of Bartsch et al (2003), amongst others, on the language children used about learning prompted the first three strands of research. If children

were to demonstrate verbally they could understand the concept of ‘learning to learn’ they needed to be able to use the language associated with it. Therefore it was necessary to find out how many children could use such language and for those who could, what was it that they understood differently from children who did not use the words, although they may have demonstrated an understanding of the concept.

The findings of the research did not indicate that the cognitive development of the child was a factor in their use of the words, but considering the findings discussed above about adults’ roles, it is important to develop the correct classroom environment so that children are given the best opportunity to develop their ‘learning to learn’ skills.

The findings of this study suggest that classroom talk, both that of adults and children, should be focussed on the language of learning when children enter the 40-60 month band of the EYFS Framework. The adults who work within the classroom should be aware of the impact of their language and where they base themselves within the classroom, affects how children perceive learning, and consequently what they believe adults deem to be important. If adults believe the Areas of Provision are important in supporting children’s learning, as stated in the EYFS Framework, then they need to be present in those areas. This study found that where adults spent time in different Areas of Provision and, in addition, used scaffolded support for children, those children had a greater awareness of the concept of learning itself and knew that it could take place anywhere in the classroom.

The children need to be supported to talk about their learning in order to move from a view of learning which is episodic, to one which supports the next stages of learning as described by Pramling (1988); ‘learn and to know about the world’ and ‘learning to understand’.

If children are going to be able to talk about their learning and thinking, and demonstrate their metacognitive development verbally, then classrooms have to support and encourage such discussions. However, there is nothing in the findings that suggests ‘teaching’ these skills is a necessity. Changing the environment in which children work through amending use of language, revising perceptions of what is important and the way in which tasks are approached, make the most difference.

Pramling (1988) found that teaching metacognitively, through structure and dialogue, made the most difference, thereby creating a classroom environment where metacognitive development can flourish. Looking at the various findings from this study, where teaching is supporting learning in a specific way some children in this age group are able to talk about the concept of learning, which is a necessity if metacognitive development is to be promoted.

7.5 Summary

The research questions in this study have considered the Cognitive Development of children and the impact that might have on metacognitive development. The questions have also considered the impact adults working with the children have, both in terms of the language the teachers use and the

actions they take in the classroom, and whether or not they mediate an understanding of learning.

The data collected provided a particular point of view, not frequently found in previous research about metacognitive development, that of the children themselves. Previous studies often focused on either laboratory or naturalistic observations by adults, familiar to the child or otherwise, whereas this study focused on the child's interpretation of their classroom world and the researchers' observations of the classroom and adults' part in it, without researching the adults' viewpoint. This provides a particular view, but one which may be important in understanding how different concepts are viewed by young children.

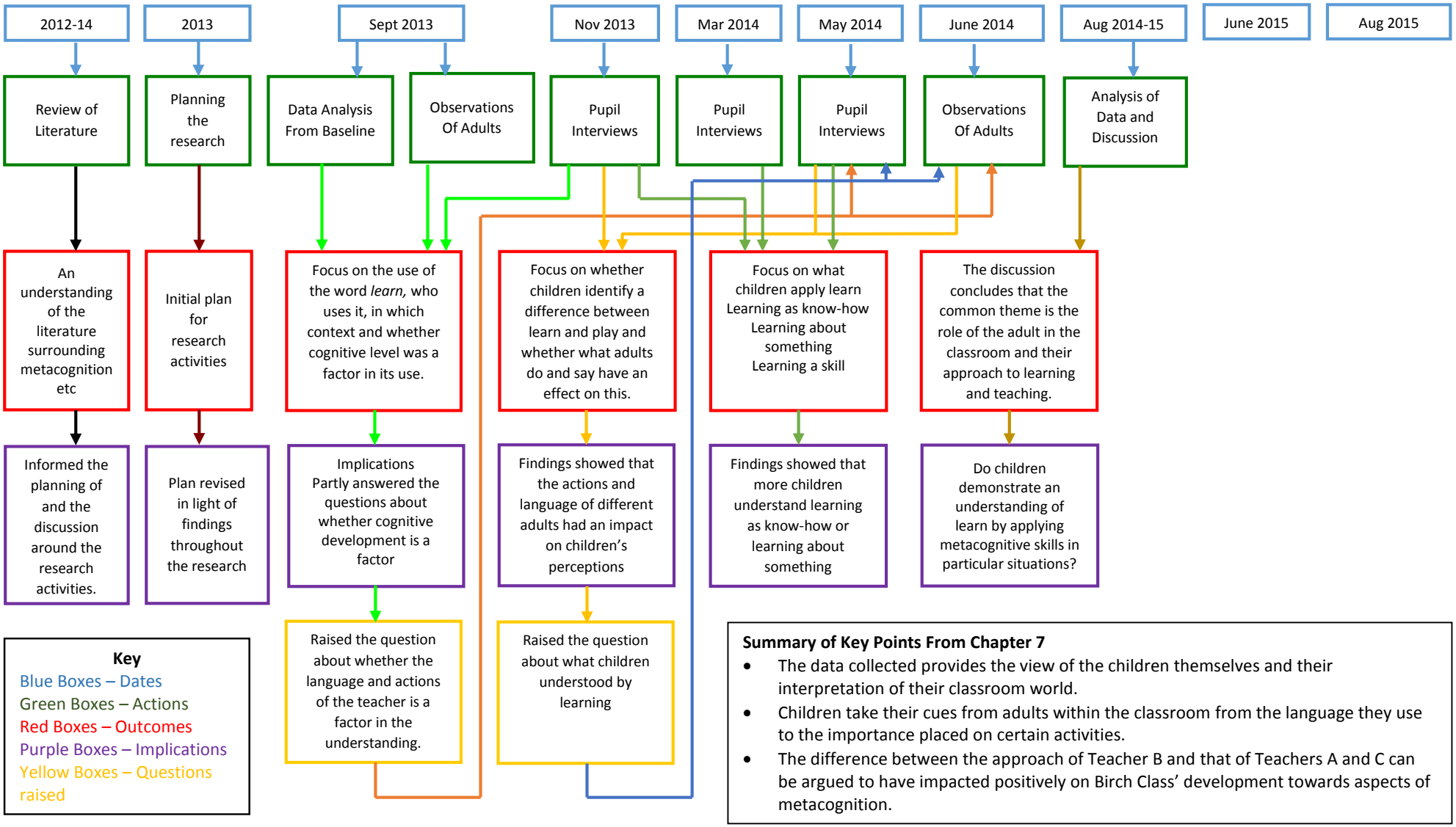
In all areas a common theme was the role of the adults, whether that is the language they use, the way they use it, the provision they make in the classroom or the places they base themselves. Children look to these adults and take their cues from them, whether that is copying the language used, or placing an importance on certain activities or Areas of Provision. Where adults demonstrate a way of teaching that involves scaffolding, open questions and a greater balance of time spent in different areas of the classroom, there appears to be a beneficial impact on how children talk about learning and playing.

Further discussion of these themes, including links with the Literature, can be found in Chapter Nine.

Section 7.6

The Research Journey Part Six

Figure 7.2 The Research Journey Part Six



Summary of Key Points From Chapter 7

- The data collected provides the view of the children themselves and their interpretation of their classroom world.
- Children take their cues from adults within the classroom from the language they use to the importance placed on certain activities.
- The difference between the approach of Teacher B and that of Teachers A and C can be argued to have impacted positively on Birch Class' development towards aspects of metacognition.

Chapter Eight

Getting Stuck

8.1 Introduction

At the completion of the work in Chapters Four to Six the results indicated, supported by the findings of others including Whitebread et al (2009), aspects of metacognition could be observed in Foundation Stage children and in particular children as young as four and that these aspects could be influenced by the adults who worked with them. It appeared that children who demonstrated an understanding of the difference between learning and other classroom activities were also able to use appropriate language to describe what *learning* is. However, whilst the research in Chapters Four to Six gave some clear indications as to how practice might be altered within the FS2 classrooms to promote the use of this language, and therefore the development of metacognitive knowledge, there was still a question around whether knowing and understanding the term *learn* showed metacognitive understanding. A further short piece of research was undertaken to test this hypothesis.

One indicator of the development of metacognition is how children deal with the issue of 'getting stuck'. If a child is able to apply one or more of a range of strategies to the problem then this suggest that they are thinking about their learning or, more precisely, how to move their learning forwards.

The additional research was undertaken to see if children are really aware of what *learning* is, then they are able to demonstrate what they understand, and

subsequently can do, about activities where they come up against a problem and cannot move forward.

8.2 The Context for the Additional Research

The work of Pramling (1988) and Bartsch et al (2003) cited in the Literature Review, which considers how children talk about learning, indicates that children initially talk about learning to do something before they talk about learning new knowledge about something. I considered whether children were able to learn what to do when activities did not go to plan and they became stuck, that is, could not make progress. If children understand the mental state verb *learn* and apply knowledge to overcome a problem presented to them, this suggests there is metacognitive thinking.

When talking about metacognition Schraw and Moshman (1995) describe an aspect of procedural knowledge called metacognitive knowledge. This is described as knowing 'how' to do things. They comment that:

> "Individuals with a high degree of procedural knowledge use skills more automatically (Stanovich, 1990), are more likely to sequence strategies effectively (Pressley, Borkowski, and Schneider, 1987), and use qualitatively different strategies to solve problems (Glaser and Chi, 1988)."
>
> (Schraw and Moshman, 1995 p.353)

One aspect of this that was of particular interest to me were the strategies the children used when they got stuck, and from whom they had learnt the strategies. I was also interested in the feelings the children expressed about tackling the problem and how these feelings influenced their desire to develop this skill or to simply give up when faced with a problem. This 'affective aspect' of metacognition is described by Larkin (2010),

> "…these feelings of confidence or doubt, interest or boredom, affect how we are likely to approach a task. Thus, they impinge on the metacognitive regulatory aspect of monitoring ourselves in relation to the task and informing how we proceed or whether we just give up altogether."
>
> (Larkin, 2010, p.11)

Efklides and Petkaki (2005) found that those students who had a negative feeling about the task beforehand often had negative feelings during the task. However, Larkin (2010) comments that having negative feelings during the task can result in more high-level thinking by the children about the difficulties encountered. She also adds that the development of resilience is linked to positive mood.

8.3 The Findings from Strand Four

In this final strand I wanted to find out firstly, whether children could identify that they had become stuck in their learning, and secondly, what strategies they knew and could actually use to get past the problem. Assuming that they were

able to use strategies they had previously learned to ‘get unstuck’ it could be concluded that they were demonstrating early form of metacognitive development.

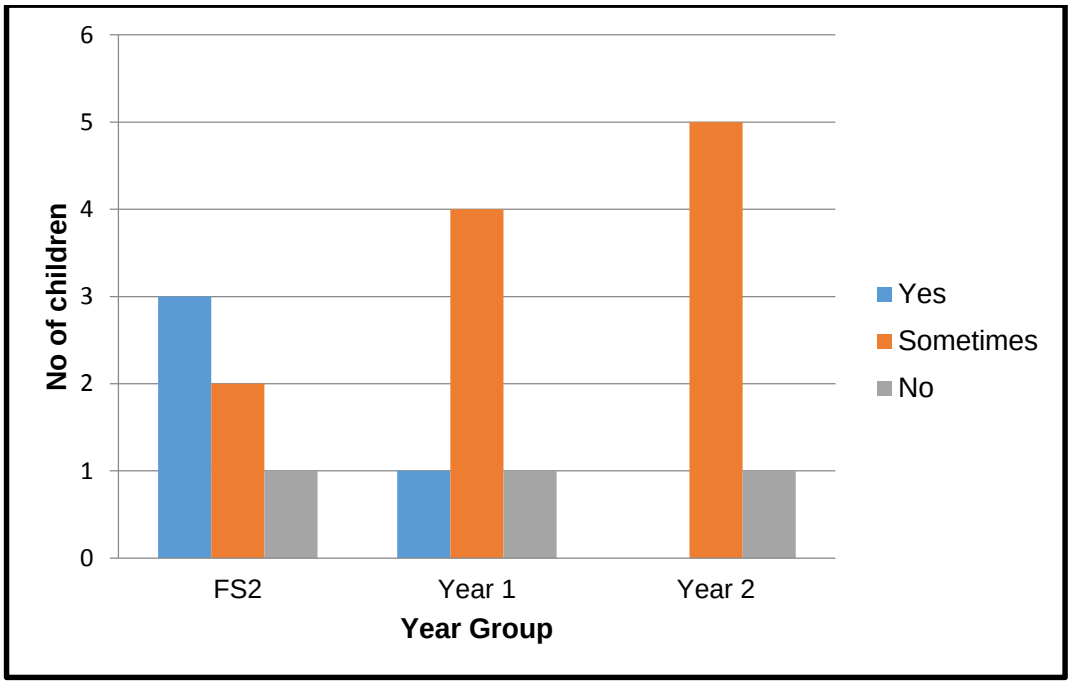
In order to determine whether the children could identify that they had become stuck various questions were asked including, what did they feel about it, what strategies did they use to deal with it and finally, did it matter if they got stuck?

8.3.1 Can You Tell Eddie About a Time You Got Stuck with Your Work?

The children were asked to tell Eddie if they got stuck with their learning. Whilst it is acknowledged that the cohort was small (six children in each age group) there does appear to be a difference in both the confidence of the responses and in how the children understand this concept.

The following graph demonstrates the responses to the question from the children in each of the three year groups.

Figure 8.1 Responses from the children to 'Can you tell Eddie about a time when you got stuck with your work?'



It appears from this sample that by Year 2 the children know they don't get stuck all the time and are able to show that they have an understanding that there are sometimes things that they get stuck on, but not on everything.

8.3.2 What Did You Get Stuck With?

The responses to this question gave an indication as to whether the children were indeed able to relate the state of becoming stuck to a particular incident. By doing this it became clear whether they really understood the concept or not. In FS2, one child was unable to give a response to the question and another had to be prompted with a follow-up question in order to elicit any information. However, for those who were able to identify a time when they had been stuck the areas that they identified were Reading and Writing. Only one child (in Year 2) identified Maths.

Vignette 8.1 Theo talking about Teacher R

Theo, a Year 2 boy, when asked to explain to Eddie what he got stuck with in the classroom said,

'Sometimes Teacher R says stuff to make me confused.'

This was a very different comment from those given by the other children and demonstrates an interesting point of view. Here is a child who identifies that it is not necessarily a thing that you get stuck with, but that the way the adult explains something, rather than the thing itself, can cause confusion.

The FS2 and Year 1 children generally identified Reading and Spelling when they are writing, as areas where they get stuck. Finding the correct phonics to use or sounding words out phonetically seemed to be readily identified issues. Comments from the children include:

Sometimes when I do a sentence or a word (FS2)

How to make the sound of the word when writing (FS2)

Reading – I read a word wrong and got stuck. (Year 1)

I get stuck working with my writing with my spelling, thinking of the letters. (Year 1)

I think of a sentence I like and then I forget about it. (Year 1)

It would appear from this that, for these children, the phonics skills needed to both read and write are those that cause the children more concern than the skills needed for Maths. None of the children making these comments were

identified as having Special Educational Needs, as defined by the 2015 Code of Practice, in their learning. They are working within the normal classroom range; 13 at or above Expected Levels and 4 Below Expected (as defined by the National Curriculum 2014) but still within the developmental band for their age. This would rule out any of them finding the activities difficult because of a learning difficulty. They are simply meeting new ideas and challenges within the next stage of their learning.

8.3.3 What was it Like When You Got Stuck?

The responses to this question overwhelmingly indicated emotional feelings of anxiety, worry or concern. Ten children identified that they experienced negative feelings when they got stuck and four expressed an element of uncertainty.

Vignette 8.2 Cameron talking about his feelings about being stuck

> *Cameron in Year 2 gave the following description when describing getting stuck with his spelling.*
>
> *'Like I don't know much – not a nice feeling.'*

Two children, both in FS2, were unable to describe what it was like to be stuck, which may indicate that they were unsure of the concept being described. Both children required follow-up questions to those in 7.5.2 to probe what they had been stuck with. This may indicate that they may not have been able to identify the concept themselves initially without further scaffolding by an adult.

Two of the children indicated that they did not have a problem with getting stuck.

Vignette 8.3 Kaitlyn describing her feelings about being stuck

> *Kaitlyn, a Year 2 child of just above average ability, but whose home situation demands that she be more independent than many seven year olds, commented,*
>
> *'I like getting stuck.'*
>
> *She did not want to expand on this further.*

This may well demonstrate that this is a child who is not disturbed by coming up against something she cannot do and, in fact, may actually relish the challenge. The other more positive comment came from a Year 1 boy, Alesandro, who commented that when he was stuck he felt he should '*concentrate and know the word'.* In this case Alesandro is describing concentration as a strategy for overcoming a problem in learning. When he understands there is a problem his solution is to give more attention to the task. This exhibits all the key features of to be an early metacognitive process.

The comments from children who showed a more negative response, related to worry. They commented that they became stuck because the work was too hard. They also referred to the fact they felt they were not any good, they didn't know anything or were cross with themselves. It was clear that the children felt a level of raised concern when they were stuck and recognised the concept of

not understanding how to proceed with an activity. The most interesting comment came from Theo.

Vignette 8.4 Theo describing his feelings about being stuck

> *When asked how it felt when he got stuck, Theo, a boy in Year 2, reported,*
>
> *'It feels weird because I wonder why I got stuck because I don't get stuck. It's weird because it is surprising.'*

This seems to demonstrate a deeper understanding of how he feels about his learning. He is beginning to think about why this has happened. Although in his answer he does not offer a solution at this point, in the way Alesandro does, he is aware of the emotional response which is an automatic process largely out of his control. It may be that he does not consider that he gets stuck when he can't work something out. Clearly learning new things does not cause him many problems and this is indicated in his cognitive development which is significantly above average. This shows resilience in that this does not worry him, but instead is something that surprises him, and he is learning ways to resolve the problem. This would seem to demonstrate a higher level of understanding than that of the other children.

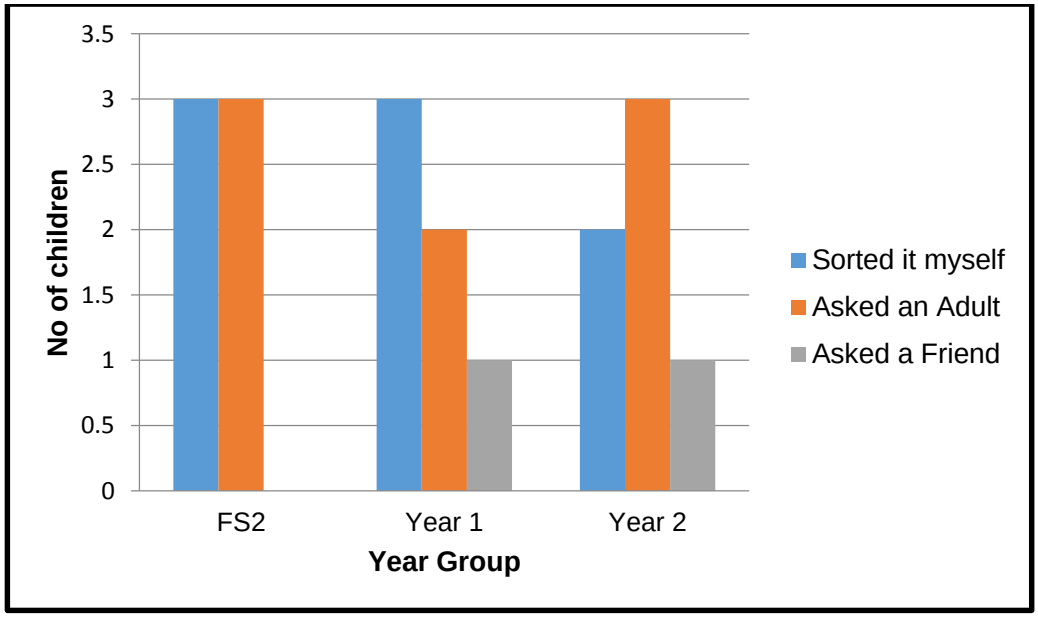
The issue of how resilient the children are is demonstrated in the next two questions.

8.3.4 What Did You do When You Got Stuck?

All but two of the children were clear that they would need some support in order to deal with being stuck. That support came from a variety of areas whether it was from an adult (including teachers), friends, or from strategies they had been taught to deal with what actions to take if they did not understand something in their learning.

This seems to indicate a level of resilience amongst the children even though they expressed feelings of being concerned; no child indicated that they would just sit there and do nothing. The following table categorises the responses given by the children into how they tackled becoming stuck.

Figure 8.2 Responses from the children 'What did you do when you got stuck?'



Many of the children answered that they would ask an adult. This is perhaps unsurprising considering that they had indicated they got stuck mainly in reading and writing activities.

At this age, especially in FS2 and Year 1, it is more likely that an adult would be sitting with the children whilst they were reading, either on a one-to-one basis or in a group reading session. The adult's role is to scaffold and support the children's learning. In writing there is likely to be a similar situation, especially in the early stages of using phonics to build words. As was stated in Chapter 5, the adults frequently base themselves in the writing area or at the writing table.

Asking a friend for help, although less frequently used, develops as the children enter Year 1. This is a strategy that we use in school as the children get older to improve resilience and is part of our Teaching and Learning Policy.

The responses also demonstrate some strategies the children have developed to support themselves. As a school we have had a focus on developing independence as the children go through KS1 and into KS2. The use of 'think aloud' which is part of Guy Claxton's 'Building Learning Power' Programme (http://www.buildinglearningpower.co.uk/ [3 May 2015]), was introduced in 2014 to KS1 and KS2. This scaffolding technique is used to model what the children might do when they come up against something they cannot do. The teacher in the 'think aloud' might go to a 'Working Wall' to find something to support the children's work, they might model a strategy, for example asking a friend, or they might model collecting a particular resource. It is intended that by scaffolding the problem solving aspect of learning, the children will develop some strategies for improving resilience and supporting their own learning.

The eight examples of responses where the children described trying to get unstuck for themselves seem to demonstrate that there is a level of success with this strategy, although as a school we still have more work to do in this area. The responses suggested the following strategies the children might use:

If you don't know what it is – look at the letters carefully and think in your brain as to what type of word it is (Year 1).

I would sound it out and just read (Year 1).

I just try to remember. I read my writing and that gives me a clue (Year 1).

I try and split the words and figure it out. (Year 2)

One child gave a clear demonstration of the skills taught through the 'think alouds' his teacher had used in the classroom:

Vignette 8.5 Theo describing 'getting unstuck'

Theo, in Year 2 when asked what he did when he got stuck in his learning replied,

'I think about it in my head. I ask a friend and they tell me something. I then decide, should I use it or should I think of something else.'

This sophisticated thinking demonstrates the metacognitive skills he has developed during his two and a half years in Primary School. Here is a child capable of demonstrating one aspect of how to learn and using it in his everyday classroom life.

Returning to Alesandro from Section 7.4.3 above, his response is not specifically to do with specific strategies he would use, but a more generic ‘concentrate’. This seems to demonstrate that he understands he needs to use a particular process to deal with an issue. He goes on to give an example of what he means by concentrate in response to this question,

> *If you don’t know what it is – look at the letters carefully and think in your brain as to what type of word it is.*

He appears to be approaching the problem in a way that demonstrates early metacognitive thinking.

8.3.5 Does it Matter if You Get Stuck?

Finally, the children were asked to tell Eddie whether or not it mattered if they got stuck. Having expressed their feelings about being stuck, I wondered whether it was possible that they felt worried because it mattered to their teachers that they had become stuck. Did they feel that an adult might be cross or upset? However, this was not the case. The children were secure knowing that it did not matter if you got stuck. The FS2 children were not always sure why this was the case, but as they got older the children were clear that being stuck was not an issue in school; there was always a way around it. One Year 2 child however did show concern that if you were stuck for too long you might miss playtime!

The reasons they gave often sounded as though they were simply reiterating what adults had previously told them, probably in order to boost morale when the work was difficult. They included:

No, because at least you're trying (Year 2).

No, because you're trying your best (Year 2).

Because you can always think of another sentence (Year 1).

It doesn't matter because I just have to think and come up with an idea (FS2).

The children all felt secure that they would not remain stuck and clearly demonstrated that this does not matter to them, or to the adults around them.

Vignette 8.6 Francis describing his feelings about being stuck

Francis, in Year 1, replied in answer to a question about how he felt when he got stuck that he felt like he couldn't do everything and that meant he wasn't any good. However, when telling Eddie that it did not matter that you got stuck he explained that,

'It is ok to be stuck because you don't have to know everything; all grown-ups don't.'

It seems that he has realised that learning things, or at least knowing them, is something that will continue for a very long time and is, for him, perhaps the beginning of an understanding of life-long learning.

8.4 Summary of the Findings

There would appear to be an understanding amongst most of the children who use the term *learn* with some degree of comprehension, that you can get stuck with your work and that this is neither unusual nor abnormal. That understanding appears to deepen with a greater level of cognitive development and age.

The fact that children get stuck with activities including Reading and Writing is not surprising given the complexities of these skills, especially at the early stages of skills development. However, the range of strategies they employ to get unstuck shows that they have a level of resilience.

It is interesting to note that some children employ what appears to be a wider range of strategies and this may be down to the teachers in the classroom and how they model and scaffold strategies for dealing with becoming stuck. I cannot say this with any degree of certainty because I have not specifically observed this for this research, but it does not surprise me that Theo, who is taught by Teacher R was able to use so many strategies. Previous observations have demonstrated that this member of staff is skilled in developing independence in children.

This confirms that teachers can be influential in giving children the skills to get beyond the stage of becoming stuck. I would therefore suggest that this area could be further developed with skilled teaching and careful planning.

When analysing the answers to Question 3 ‘What was it like to be stuck?’ I was concerned that the children might feel a range of negative emotions in this situation. However, the fact they were almost universally positive in telling me in response to Question 5 ‘Does it matter if you get stuck?’ that it does not matter, suggests that these feelings are a part of the learning process and essential to becoming a resilient learner.

8.5 Discussion of the Findings from Strand Four

This section aims to add to the picture of how metacognition is observed within children in FS2 and KS1 by considering what they report happened when they found work difficult and ‘got stuck’. Links are made with the earlier chapters in terms of whether cognitive levels of development play a part in how children responded to the questions. Consideration is also given as to whether the responses of the children were related to the class they are in and therefore what part the teacher plays in developing this aspect. Finally, the strategies the children used when they became stuck, and the feelings the children had about overcoming the problem, are discussed.

Returning to the Literature the findings from the interviews with children have links with the work of Pramling (1988) in that the children do talk about learnt behaviours they use when they get stuck. Their answers indicate that they have learnt a behaviour, or several different behaviours, to ensure that getting stuck does not mean they are unable to move forward in this learning. This behaviour can be seen as metacognitive in character because it generally involves thinking about the process and deciding what to do next in order to make

progress. Of the 18 children interviewed, only two children gave an answer that might be interpreted as giving up and being unsure as what to do, whilst everyone else had strategies for getting though the problem. These two children were both in FS2.

The other aspect discussed in the literature was Larkin's (2010) view that feelings are important and how the children feel about approaching a task affects how they might tackle a problem. The findings from this strand of research did not focus on how the children felt about a task, but on how they felt when they were stuck. The responses changed as the children got older. The children in FS2 and Year 1 mostly indicated feelings of worry and concern that someone would be upset that they were stuck, whereas those in Year 2 had a much wider range of feelings including worry, but also surprise and challenge. However, the children describing the range of feelings knew that it did not matter that they got stuck. These answers would seem to be in line with Larkin's findings. Although the children experienced feelings of worry, they knew it did not matter if they were stuck. This probably indicates that they are confident to tackle problems. They, therefore, demonstrate the 'affective aspect' of metacognition described by Larkin in Section 8.2.

8.5.1 Does Cognitive Development have an Impact on how Children Responded to the Questions?

The children chosen for this strand of research all understood the concept of *learn*. The table below demonstrates how many children in each age group fell within the three areas of the Below Expected, Expected and Above Expected

National Curriculum 2014 Bands for their age. As previously mentioned none of the children had Special Educational Needs. FS2 is measured using the On Track assessment tool described in Chapter Four. The children in Years 1 and 2 are measured using an Average Curriculum Points score for Reading, Writing and Maths combined.

Table 8.1 The cognitive development levels of the children in Strand Four interviews

	Below Expected	Expected	Above Expected
FS2	1	3	2
Year 1	1	2	3
Year 2	2	2	2

In Year 2 where the spread is even there was no difference in the responses to the questions. All the children could identify what it felt like to be stuck and give strategies for getting unstuck. Theo as an Above Expected child gave the most sophisticated response in terms of strategies he would use, but it is difficult to say whether this is linked to his development or to the teaching he has received. In Year 1 there is no clear link between cognitive development and the types of strategies used. Alesandro, who is Below Expected attainment, and Freddie, who is Above Expected attainment, for their age, both used strategies that did not include an adult. The rest of Year 1, whatever their level of development, used strategies that included adult support.

Finally, in FS2 there were two examples where the children used an avoidance style of strategy when they were stuck. These were both from children working at the Expected Band. The other children, whatever their stage of cognitive

development, all used similar strategies so the level of cognitive development does not seem to be an indicator of the metacognitive strategies that are developing.

8.5.2 Does the Teacher Play a Part in Developing the Way Children Tackle Getting Stuck?

Because of the small numbers of children from each class who took part in the research in Strand Four it is difficult to draw conclusions to this question. From the findings in Chapters Four to Six, it seems likely that the teacher does have an influence on the children's development of language and of the learning skills they develop. In the school children have a different teacher in every academic year, therefore they may be influenced in these areas in different ways by each teacher.

Within the answers given by the children in FS2, which generally indicated that if they were stuck they would seek adult support, this strategy seems to be a common one across the three classrooms. By Year 1 and Year 2 a greater range of strategies are in use. These strategies have clearly been taught to the children, either in a formal way or informally scaffolded when children have got stuck in the past, and they are now transferring those skills to other situations when they get stuck. The children interviewed from Year 1 came from two different classes. The six responses given by the children fell into two groups – those involving adult support and those who talked about using different strategies. Of the four children from Hazel Class, three spoke about getting adult support and one using other strategies. The two children in Pine Class

both talked about using strategies which did not include adult support. Whilst the sample is very small it is possible that differing approaches by these two teachers may play an important role in how children tackle problems.

In Year 2 the answers were characterised by the fact the some children talked about using more than one strategy. This would seem to indicate that by this age the children have an understanding that there are a set of strategies to choose from. The response from Theo given at Vignette 8.5 demonstrates the skills of a child who has successfully learnt a range of strategies and his answer indicates that he would work through them until he solved the problem. As mentioned above it is likely that Teacher R had an part in this, but with only one child interviewed from this class there is no way to verify this.

8.5.3 Strategies the Children used to Get Unstuck

The answers about the children's reaction to getting stuck were sometimes generic and sometimes specific to the activity the children were thinking about (strategy based on current knowledge).

Table 8.2 Strategies described by the children when they were stuck

	Asking someone	**Strategy based on current knowledge**	**Other Responses**
FS2	3 (adults)	1	2
Year 1	3 (adults)	3	
Year 2	7 (4 adult/3 friend)	3	

Where the strategies did not include another person they ranged from using very precise strategies, for example sounding out words, to those that indicated

that the children were employing a strategy but did not necessarily have the language to express what it was.

Vignette 8.7 Gemma talking about what she gets stuck with

> *Gemma in Year 1 when asked 'What do you get stuck with?' replied,*
>
> *'When I am writing I have too much to write down. I forget what I was going to say.'*
>
> *She responded to the question 'What do you do when you get stuck?' with the following response,*
>
> *'I just try to remember. I read my writing and that gives me a clue.'*

Without talking about specific strategies she does seem to be indicating that the act of reading her own writing prompts her to move forwards. This seems to be a strategy of rereading which she has learnt, or been taught, and she is now applying this strategy without prompting in this situation.

8.5.4 How the Children Feel about Getting Stuck?

One important finding from this part of the research was that although the children experienced what we, as adults, might term some element of negative feelings, the children were very clear that being stuck did not matter as there was always a way of becoming unstuck. The language the children used to describe how they felt was varied, as some children described feelings of worry, nervousness or even surprise. Penny in FS2 gave the most graphic description in the following vignette.

Vignette 8.8 Penny describing her emotions on getting stuck

Penny an FS2 child described getting stuck with a word in her reading book. In response to the question 'How do you feel when you get stuck?' she replied,

'It feels like my heart is clattering.'

In response to the question 'Does it matter when you get stuck?' she indicated that this did not matter at all.

'No one would be cross; they would ask if I needed a helping hand.'

This vignette is an example which demonstrates the level of resilience the children in all year groups demonstrated through their answers. This does not support the work of Efklides and Petkaki (2005) described above, where children had negative feelings during the task, but is more in line with Larkin (2010) who found that children demonstrated higher-level thinking and a more positive mood if they demonstrated resilience. It could be described as worry telling them to stop and they are responding to it. They stall and then go again changing their worry into something more productive.

It appears that the overwhelmingly positive comments made by the children that it doesn't matter if they get stuck shows resilience which could have developed from two areas. Firstly, some strategies the children have developed for themselves and secondly, some that adults have taught them. This lends support to the idea that resilience can be taught within the classroom situation.

8.6 Conclusion to Strand Four

This additional research has considered whether metacognition can be seen to be demonstrated in children, through examining a particular aspect of children's learning in the classroom. The interviews were designed to elicit an understanding of how children react in a particular situation, getting stuck, and whether their responses show a metacognitive approach to problem solving.

The research findings indicate that the children are responding metacognitively to the issue of being stuck. The range of strategies they use to get unstuck indicate that they are thinking about learning strategies they have been taught or they have developed themselves. This is demonstrated across all three year groups.

It is acknowledged that there are limitations to this additional stand of research in terms of the numbers of children interviewed from each year group. Unlike the research in Chapters Four to Six the influence of individual teachers cannot definitively be said to have supported the development of particular strategies because of the limited number of children interviewed from each class. Although the majority of answers suggest a particular approach to getting stuck the limited numbers of children involved mean it cannot be said to be definitive. A larger and longer study is needed to see if these findings can be replicated with the same teachers and successive cohorts of children.

8.7 Links Between the Strands

In summary this final set of interviews demonstrates similarities in findings between the different strands of research in terms of the importance of the adults who work with the children and their role in scaffolding learning. There are also links in the opportunities provided for supporting learning and the teaching of particular skills. Within this strand it is more obvious than in Chapters Four to Six that the children are developing metacognitive knowledge and even metacognitive 'know-how'.

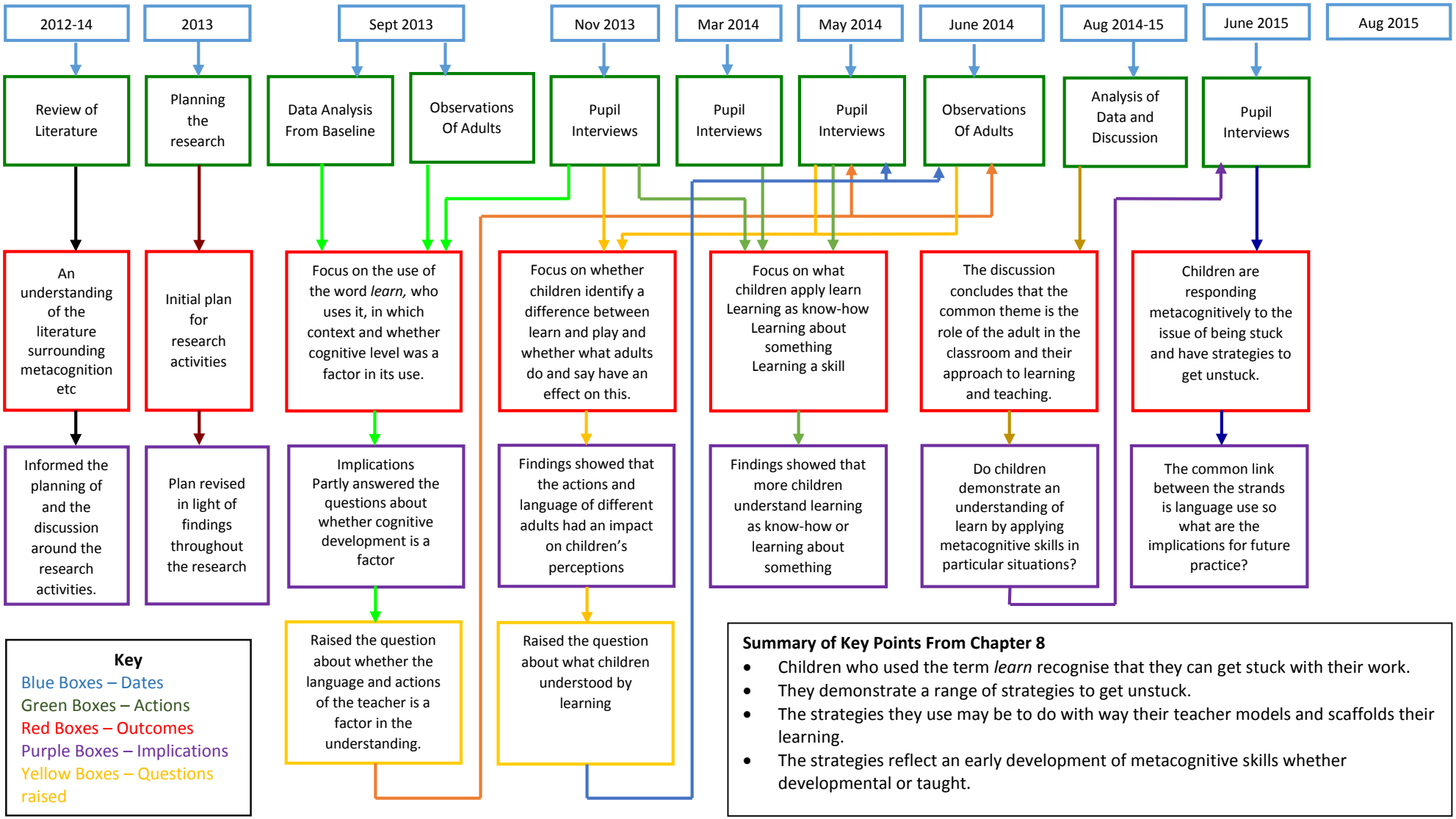
This is because metacognition is being demonstrated. This supports some of the findings in the previous strands where the language the children are able to use limits their ability to demonstrate metacognitive knowledge.

Overall, these children, aged four to seven, seem to be aware at times that their thinking or learning is not moving in the desired direction. Some have strategies for dealing with the problem. These strategies include in particular, asking for help from an adult, or from another child. Some draw on their own resources and some draw on a mix of these at different times. While these are not the sophisticated, analytical responses adults and older children might use, these strategies may be the early beginnings which could reflect the children's mental development or the result of teaching, or a mutually supportive combination of both.

Section 8.8

The Research Journey Part Seven

Figure 8.3 The Research Journey Part Seven



Chapter Nine

Drawing Conclusions and Making Links

This study set out to consider the factors that might have an impact on the development of metacognition in Early Years children. The overarching research question was, 'Which factors contribute to a young child's ability to learn how to learn?'

9.1 Introduction

The work of Whitebread et al (2009) and Larkin (2010) indicates that elements of metacognition can be observed in children aged between four and six. This study has considered factors that are present where children demonstrate elements of metacognition in FS2 (four and five year olds).

The research questions I sought to answer were:

Do FS2 children understand the concept of *learn* and can they verbalise it?

Is the cognitive development level of the children a factor in this understanding?

Are the language and actions of the teacher a factor in this understanding?

Do children demonstrate an understanding of *learn* by applying metacognitive skills in particular situations?

The study was carried out in Foundation Stage classrooms using observations of teachers' practice, taking written records of their use of language and pupil interviews. In line with Shamir et al (2009) the interviews were supported by resources (photographs) and a mediating object (Epstein et al 2008)(Section 3.7.5) was used. These were successful strategies in terms of encouraging such young children to participate in the interviews.

No child refused to talk to Eddie and the information derived from the questions and answers was generally relevant to the question asked. Where an appropriate answer was not given it was clearly not a deliberate refusal to co-operate by the child, but was merely because they were unable to understand, or to give an answer, to a particular question. Whilst the type of robust, continuous, naturalistic observations described by Whitebread et al (2007) in Section 2.2 would add to the data, a more involved and sustained project would be needed.

I conducted an analysis of different aspects of teachers' classroom practice across the three FS2 classes. By asking for the children's views of their classroom experiences, I sought to establish the teachers' impact on the development of the children's understanding and use of the language of *learn*. I also considered what this might mean in practice and whether the understanding of *learn* meant that metacognitive skills and knowledge were already being developed.

9.2 Answering the Research Questions

9.2.1 Do FS2 Children Understand the Concept of *Learn* and Can They Verbalise it?

From the analysis of the children's answers to the interview questions in the Chapter Four, where the use of *learn* by the children was considered, and in Chapter Six, in which an understanding of the term was the focus, it became apparent that there were some children who understood the concept of *learn,* but others who did not. In order to confirm this, there needed to be an exploration of children's understanding of what happened in their classrooms. The analysis of the answers to the questions relating to this understanding showed that children used four words to describe classroom activities *learn, play, do* and *work*. Some children were clear in their understanding of *learn* and were able to verbalise it, others knew there was a difference between *play* and other activities, but did not have the language of *learn* to describe it. These findings are in agreement with those of Garner and Alexander (1989) in Section 2.7, who found that for some children it is the development of language, and not cognitive understanding, that prevents children from describing their learning. There were also children who made little, or no, distinction between the classroom activities, often referring to them all as *play*, *playing and learning* or *doing* something.

The pupil interviews confirmed the findings of Pramling (1988) in Section 2.5, with regards to how young children use *learn*. Where it was used in this study, in the same way as in her research, most children related it to 'learning to do something'. A few related it to 'learning about the world' or 'learning facts' but

none commented on ‘learning to understand’. Whilst there was a narrower age group in this research, four and five year olds, rather than four to seven year olds in Pramling’s research, the use of *learn* seems to indicate that there is a developmental level of understanding of the different things to which *learn* can be applied.

Although there is a debate in the Literature about whether or not children comprehend the difference between *learn* and *play*, the findings show that most children use the word *play* to describe some classroom activities, whether they use *learn* or not. Children relate *play* to those activities that adults might also term as *play*. Where children do not use *learn,* they normally use *do* or *work* to apply to the same activities referred to by other children as *learn*. Here the findings are more like those described in Section 2.7 by Keating et al (2000) who said that children do differentiate, rather than those of Montessori (cited in Keating et al 2000) and Pestalozzi (cited in Ailwood 2003) who talk about learning through play.

It was therefore necessary to explore what the difference might be between these different groups of children in the further research questions.

9.2.2 Is the Cognitive Development Level of the Children a Factor in this Understanding?

As discussed in the Literature Review in Chapter Two there is a diversity of opinion amongst researchers about the age that metacognition begins to develop in children.

Whitebread et al (2007) focused on observing this in young children (aged 3-5) and this study has found that there is evidence to support their views; that elements of an understanding of *learn* is evident at four years of age. This could be seen where *learn* as a term was used to describe activities that demonstrated learning. This supports the findings of Larkin (2010) in Section 2.8, who said that there are a selection of words, which Gjems (2010) refers to as 'mental verbs', which children do know but which they do not use in their everyday language. This study found that *learn* was used by 44% of the children interviewed. It is possible that the other children who were interviewed knew the term, but did not use it because it was not part of their everyday language. This also supports the finding of Bartsch et al (2003)(Section 2.7) who found that children were at this age more likely to report what they had learned in terms of behaviours. Developmentally, there will also be children who do not use *learn* because they do not understand what it means.

An examination of the children's cognitive development showed that there is one, very clear, finding: children developmentally working entirely within the 30-50 month band do not use the term *learn*.

As reported in Section 2.5, the findings of Larkin (2010) and Whitebread and Coltman (2010) show there is evidence of an understanding of *learning* in the early years. The consideration of this within the research demonstrates a similar finding. Children with scores across both the 30-50 and 40-60 month bands, as well as those wholly within the 40-60 month band, do not show a definite trend; some children who used the term *learn* were performing at an above average

level for the cohort in the Baseline Assessment, but there were also children in this band who didn't use the term, and there were children working below the average level for the cohort who did use it. It can therefore be stated that once the 40-60 month band is reached in even a few areas, the assumption can be made that everyone is ready to make that step in their understanding and they should be offered the range of experiences and language needed to develop their metacognitive skills. This completely contrasts with the findings of Flavell (1976) and Griffin and Ruan (2005) described in Section 2.11 who argue that metacognition does not develop until much later in childhood. This research supports the findings of Whitebread et al (2007). The naturalistic setting of a school, rather than the Laboratory tests and self-reporting studies of Flavell (1976), ensures children can demonstrate their understanding of *learn* at this early age.

Consequently, classroom practice needs to be considered in terms of how teachers focus on developing metacognitive skills and knowledge, as virtually all children will be performing within the 40-60 month band by the end of the year. Teaching such skills to older children can, amongst other strategies, take the form of a programme of lessons, but at this early stage of school life the curriculum does not work in the same way as it does later on in the Primary School. It is important that staff are developing these skills in children by working alongside them during the activities they undertake with them in the classroom; in the way they question them, in the scaffolding of new learning and in the language of learning they use with them.

Training staff in developing these parts of their practice is necessary before further research can be carried out to establish whether or not the changes to teachers' practice have an impact on how many children have an understanding of this early stage of metacognition.

9.2.3 Are the Language and Actions of the Teacher a Factor in this Understanding?

The findings of this study seem to reinforce the findings, in Section 2.5, by Pramling (1988), Whitebread et al (2007) and Georghiades (2004) about the importance of adults helping children to understand the way they think about their learning. In particular, the findings of Whitebread et al (2007) that the role that adults play imposes limitations, is replicated in the way that different teachers in the study used language to support the learning in their classrooms. This study suggests that there is a link between the use, in children's everyday language, of *learn* and the teacher's use of scaffolding and open questions.

The analysis of the data showed the importance of the role of the adults in the way the children talked about learning within their classrooms. In Chapters Four to Six it was particularly the teachers' role which influenced the children's understanding and view of the importance, or otherwise, of different activities in the classroom. The way teachers used language within the classroom may have had an impact on whether the children had an understanding of, and could use, the term *learn*. Coupled with the fact that different classes spoke about learning in different areas of their classrooms this suggests, in line with Keating et al (2000) that the teachers' use of language is a noticeable factor in

developing children's understanding of different terms and their perceptions of areas of importance within the classroom.

Therefore, it is important that teachers are aware of the language they use when taking about learning, of their positioning within the Areas of Provision in the classroom and of the importance, as perceived by the children, placed on different activities. The importance of these three elements in developing metacognitive skills and knowledge among children is that, unless children have the concept of *learning,* they will not be able to express an understanding of 'learning how to learn' skills. The findings of this study also support Dickinson et al (2014) and Lennox (2013) in Section 2.8, that both the academic register of a teacher's language and teaching children the language of learning are crucial if the children are to demonstrate verbally that they understand the concept of *learning*.

If children are able to express their understanding because of the language they have been taught, as described by Gola (2012), then they can be supported in developing metacognitive skills and knowledge. This research agrees with both Hammond and Gibbons (2005) and Larkin (2010)(Section 2.8) that adults are crucial to moving learning forwards and to developing an understanding of such knowledge and skills. It demonstrates that if the children do not have the understanding of the mental verbs such as *learn*, this understanding can be taught by practitioners, as demonstrated by Teacher B in Vignette 7.6, and scaffolded so the children can move forward to the next stage of development. This is supported by Wall's (2012) findings described in Section 2.7, that

articulation by the adults of the language of learning is of great benefit to children's developing understanding.

This study agrees with the work of Pramling Samuelsson and Carlsson (2008) that the school culture mediates the child's understanding, particularly through the focus that adults place on different areas of the classroom. As a result of the findings from this research, it is important to recognise the need for raising staff awareness of this effect. Staff training should be undertaken about the language they use in the classroom, as well as the importance teachers and teaching assistants place on particular areas of the classroom and aspects of provision within those areas.

These research findings support those of Bartsch et al (2003) and Pramling (1988) in terms of children initially relating *learn* to 'learning to do something', but then 'learning about something' and finally 'learning to understand'. FS2 teachers need to focus on the first two as no child, of this age group, in either Pramling's research or in this study has reached the third stage of development. By focusing on the language and providing scaffolded opportunities to explore these concepts with the children on a regular basis, these skills may develop in most children, enhancing their understanding of the process of learning.

9.2.4 Do Children Demonstrate an Understanding of *Learn* by Applying Metacognitive Skills in Particular Situations?

From the analysis of the responses to the interview questions in Chapter Eight it is apparent that children in FS2, Year 1 and Year 2 can demonstrate

metacognitive skills when faced with a problem. The purpose of the final Strand of Research was to place the findings from Chapters Four to Six in a context where it could be proven that the children had not only talked about understanding a concept, but were also demonstrating that concept in action. The use of the pupil interviews around 'getting stuck' helped identify whether the children had strategies to deal with the problem or simply gave up and walked away. It became clear that, even in FS2, children were able to employ some strategies and some children employed more sophisticated strategies which had been taught to them by other people, including other children.

The research described in Chapter Eight indicated that children are applying strategies in order to 'get unstuck' and therefore it can be said that the children are demonstrating some aspects of metacognition. They have learned a skill, or set of skills, that will help them with their learning when they encounter an obstacle to progress. They are developing metacognitive knowledge and skills which will help to support their learning. They also demonstrate a level of resilience in that, in spite of feelings that might be described as negative at the time of actually 'getting stuck', none of the children interviewed indicated that this would stop them; they understood that it didn't matter and they were confident that they could find a way through the problem, whether that was with adult support or by employing one of the strategies they had learnt or developed over time. This agrees with the findings of Boekaerts et al (cited in Whitebread et al (2007)(Section 2.2) regarding the control of emotions and motivational states involved in metacognitive regulation, but contrasts with Efklides and Petkaki (2005)(Section 8.2) views about pupils' negative feelings during a task

they anticipated finding difficult. The answers given in the pupil interviews suggest that the supportive and positive reactions they get from the adults, and other children, make a significant impact on the development of the pupils' resilience. However, the research findings from Chapter Eight do not go far enough to prove whether Whitebread et al's (2007) views, that metacognitive regulation drop when adults become involved in an activity, are replicated.

It is not possible to say, with certainty, how these strategies have been developed as the sample of children from each class was very small. From the answers given by the children it is possible to suggest that the responses could have been as a result of trial and error in previous situations, strategies offered to them in the past by teachers or parents, or by other children, or that there were specific strategies taught to the whole class. In order to confirm how these strategies developed, or were learnt, a study would be needed comparing groups of children from each class. In addition, observations need to be undertaken of staff and children in day-to-day situations where children are actually coming up against problems to see how they deal with them which would also need to consider the actions of the teacher as well as of the child.

Furthermore, if particular aspects of a teacher's practice are identified as having a positive benefit, then these should be shared with others and training provided to ensure that all children benefit from improving classroom practices. Further research in the Early Years could contribute to this, particularly in the field of the teachers' approach to developing the language of learning, and of developing approaches to learning using scaffolding to teach skills which assist in the

learning process. Such research might include the development and implementation of a range of language used in a specific situation, for example when explaining the purpose of learning to a child. An approach to teaching and learning where teachers are overtly demonstrating skills related to metacognition might also support the children's understanding of their own learning.

9.3 The Strengths and Limitations of the Study

The following section considers the structure of the study and where its limiting factors are in terms of drawing firm conclusions.

9.3.1 Strengths

The study took place in a naturalistic setting looking at children in their own classrooms, working with their own teachers. This eliminated issues of children working with unfamiliar adults and the children's reactions to that situation which is found in some research studies. As a Headteacher Researcher, the children were used to seeing me around school and I taught all three classes from time to time, meaning that I was a familiar adult. Despite the limitations of this role, in that the children might have told me what they believed I wanted to hear, there did not appear to be a problem with this in the pupil interviews. This was because there were no questions that might have appeared to the children to have a right or wrong answer. In addition the use of Eddie as a mediating artefact helped focus the children's answers as if they were talking to another child who didn't know their classroom, rather than to an adult.

The study looked at the practice in three parallel classes in the same school, eliminating differences in terms of policies and curriculum that might have existed between different schools. In addition, the moderation of On Track data ensured that judgements that might have varied from school to school, were not only in-line with each other internally, but also with external expectations.

9.3.2 Limitations of the Study

There are however, some limitations to the study. One of these was time. As the project moved forward, new avenues of investigation arose from the analysis of the observations and from comments made by children during the pupil interviews, which, whilst within the scope of the study, could not be followed through due to time constraints. The implication of this is that whilst the research questions were answered the completeness of those answers cannot be validated or tested.

Time constraints also limited the exploration of impact of the teachers, with regards to both the language the children used and their perception of what is important, or not, in the classroom. If time had allowed, an intervention and then further observation and interviews to see if this changed the responses of the children, would have been explored. Therefore, it should be noted that this study is only a beginning and that further research is needed to replicate and extend initial findings.

Other limitations include the fact that photographs for the interviews were provided for the children. Had cameras been given to the children and

conversations structured around their own pictures, other viewpoints on classroom activities may have emerged.

Although this research encompassed three classes of children in a single year group some of the findings show differences that are very small, meaning that statistical significance cannot be attached to some of the findings. The children and teachers all came from the same school meaning that whilst, school to school differences can be ruled out (a strength of the study), it was not necessarily a typical sample of children of this age. The study group was drawn from a cohort who began the year below the expected level of attainment for children of their age, particularly in Communication and Language Development. This may have had an impact on the actual stage of development where *learn* is used by children. These four and five year olds may not be the same as four and five year olds in a neighbouring school or elsewhere in the country. They are simply a sample of time and place.

Given the naturalistic setting, as long as the study's limitations are kept in mind, it offers insights into young children's thinking about learning in uncontrived conditions.

9.4 Relatability

Bassey (2001)(Section 3.10) has proposed a useful notion of 'relatability' for studies of this kind where generalisation might not be fully claimed. Relatability refers to the extent to which others might relate the findings of the study, in full awareness of the method and sample used, to their own situation, adapting

those findings to suit the context concerned. Considering this, relatability of this research is possible. Whilst only some of the parameters of the research can be replicated, there are aspects that can be considered and may have impact elsewhere.

Some of the conclusions that may be relatable in other situations are described below. However, there was no strong evidence that ability per se had a great deal to do with early metacognitive activity.

Other studies relating to the early years including Pramling (1988), Anderson et al (2003) and Larkin (2006) focussed on children from across more than one school. All three were classroom based research, as was this project, and all determined that metacognitive skills and knowledge could be seen in children as young as four. This particular project, although carried out in one school, is comparable with the studies above because it was classroom based (unlike the early studies by others including Flavell), used children from more than one class and used observations and interviews. Therefore it is extremely likely that the findings can be replicated in other similar school settings.

The importance of the teachers' impact on the language used by children has been considered at length. One conclusion that has been reached is that the way the teacher uses language in the classroom is likely to impact on both the language the children use to describe concepts and on the development of how they think about their learning. In short, the language teachers use seems capable of promoting early metacognitive thought.

A further conclusion is that where the teachers base themselves in the classroom, is likely to have an impact on the importance the children place on particular activities and how they interpret them in terms of learning.

Reviewing what has been found out about the children, and in particular whether they have an understanding of the language related to learning at this age, it can be said that some children have an understanding of certain aspects of *learn* in terms of *know-how* and 'fact learning'.

It is very difficult to determine whether a child has any understanding of metacognition without this vocabulary and just knowing the word *learn* does not make it certain that the child has an understanding that you can' learn how to learn' and that this will help their future development. Using some of the findings of this study it can be said that some children in FS2 (aged four and five) may be able to identify there is a concept called *learning* and a few may be able to further demonstrate this, verbally or in action, as metacognitive behaviour or skills.

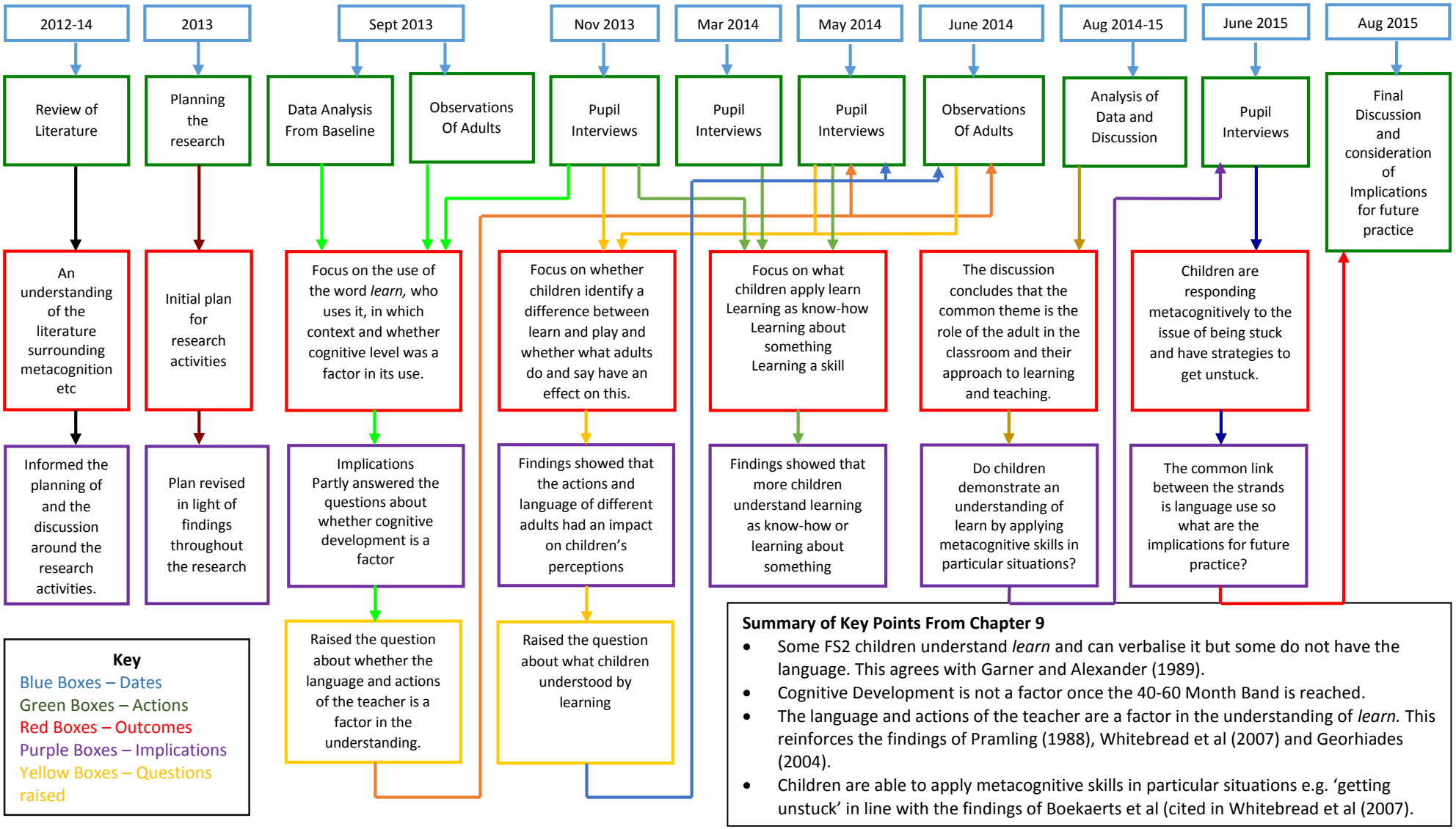
9.5 Conclusion

This research has allowed me to reach a number of conclusions, particularly about the factors which promote metacognitive development in the Early Years, including the impact of adults' language and actions on the development of both metacognitive knowledge and understanding. It is important that such knowledge is used to help children make the best possible progress. Chapter 10 looks at the implications of the findings for the school.

Section 9.6

The Research Journey Part Eight

Figure 9.1 The Research Journey Part Eight



Chapter Ten

Looking Forward

This study derived from my background as a teacher (of Early Years children) and as a headteacher who is constantly searching for strategies to help the children maximise their potential, thereby ensuring that the learning experience meets both the current needs of the children and prepares them for the next stage in their learning.

This research is contextualised in the current education climate which sees a relentless drive for higher results for all children, including 'closing the gap' between the most vulnerable learners and those achieving higher results. The search for strategies to achieve this has shown metacognitive training to be one of the most effective teaching and learning tools. The Sutton-EEF Toolkit (https://educationendowmentfoundation.org.uk/toolkit/toolkit-a-z/ [1 March 2015]) indicates that the average impact of using this approach is 8+ months of learning. In terms of academic achievement for children this approach clearly has benefits, but the questions arises as to whether aspects can be implemented in school as early as FS2?

This thesis proposed that by identifying factors which affect children's ability to 'learn how to learn' these factors could be used to train staff and change classroom practice with the result that more children would be able to use metacognitive skills to aid them in their learning and thus make greater academic progress.

The following section considers implications for changing practice to best help children use metacognitive skills in day-to-day classroom life.

10.1 Implications for Future Practice

10.1.1 Implications for How Adults Use Language

The research findings about the impact of the adults on the way the children talked about *learning* has implications for staff training, particularly in the use of scaffolding and asking open questions. If all staff used scaffolding to support learning in a more structured way, there is likely to be a greater number of children who develop an understanding of *learn* at this age.

The differences in the use of *learn* between classes led to the teachers ceasing to use the two phrases which seemed to inhibit the children's understanding of certain terms, soon after the end of the study. Firstly, the term '*Playing and Learning'* which had, for some children, become a title for free play, without any understanding of what the teachers' intention had been in devising the term, was dropped. Secondly, the teachers stopped using 'special job' when a teacher wanted a child to undertake a structured focused task. The children felt good about what they were doing because it was 'special' but did not always understand this 'special job' was designed to move their learning forwards. When teachers do not scaffold such understanding, opportunities can be lost.

There is some evidence that where teachers are really clear about the learning to take place, for example in phonics sessions, the children understand there is learning, all be it in the *know-how* skills based category. If this is clear for each

activity then more children might use the terminology and show some understanding of it. Heightening awareness of the use of *learn* with all staff is another aspect of training that will potentially make a difference to how children perceive the concept of *learn*.

One aspect of change within our school between the two periods of research (Strands One to Three of the Research described in Chapters Four to Six and that done at Strand Four described in Chapter Eight) was some initial work on altering teachers' use of language about learning.

Teacher M, who was one of the FS2 teachers in Strand Four, has been using and explaining *learn* since the beginning of the Academic Year, after receiving some training on the use of specific language relating to learning in the classroom. When I came to select the children from that class who were to take part in the Pupil Interviews in Strand Four, it quickly became clear that the children in her class were very familiar with the term and its meaning. I only had to do the pre-research questions with four children to find the two I needed from that class, in comparison with ten from one of the other FS2 classes and seven from the third. This almost incidental finding demonstrates that the use of language and the way children have been taught to use *learn* in an appropriate context by Teacher M has impacted upon their understanding.

This finding is comparable with that in Bartsch et al (2003) who found that adults help children to understand the concept of learning by talking to them about it and also with Pramling's (1988) findings that children's thinking

develops differently if the teacher continually focuses on the children's understanding of learning over time.

The change in language, brought about because of the findings in Strands One to Three, was shared with teachers at the beginning of the Academic Year and put into practice in Teacher M's class, would appear to have had an impact. Classroom Observations across the year have indicated that she is using the language of *learn* noticeably more that the two other FS2 teachers. However, as this was not the focus of Strand Four it cannot be stated that this use of *learn* is the only difference in classroom practice. It is possible that Teacher M, who was not a teacher in the FS2 classes in Strands One to Three, also demonstrates different practices in other aspects of her teaching that might influence the children. As it has implications for future practice this area should be further explored outside of this particular piece of research.

10.1.2 Implications for How Children Perceive the Importance of Activities

The perceived importance of Writing by the children seems to give it an unbalanced status compared with other activities, even those (Reading and Maths) that are traditionally perceived by adults as equally important. Comments indicated that the children felt Writing was almost more important than any other activity. Whilst no one would disagree that this is an important area, the EYFS Framework includes seven Areas of Learning and Development that are supposed to be equal and Writing makes up only 8% of the 'Good Level of Development' judgement in the Foundation Stage Profile. In this school it is clear that teachers should not change the value they place on Writing, but need

training in valuing all areas of the Early Years Foundation Stage Framework as being equally important. This may be as simple as other wall displays being regarded equally important with the Writing Wall and other Areas of Provision being seen as important as the Writing Area, and possibly, ensuring that writing is available and used in all areas. Teachers will also need to make sure they are frequently seen in all the Areas of Provision in the classroom. The greater variety of adult placement across the Areas of Provision in Birch Class may link with more uses of *learn.* In addition in Birch Class some examples of good scaffolding were observed in practice in the Areas of Provision, over and above the use in the Writing Area, and whole class teaching activities based on the carpet. Putting all these elements of good practice into place across FS2 may have an impact on the development of the understanding and use of *learn* and subsequently result in improving learning of and for the children.

The balance of how adult time is spent on structured and non-structured activities may have an impact on how children perceive the importance of the activities that take place within each area of the classroom. Where, as in Birch Class, and to a lesser extent Alder Class, the balance was more even between the adult time spent on each activity and the teacher's use of scaffolding and open questions, the children's use of *learn* was more frequent. Therefore, does an adult's presence give a signal to the child that learning is taking place? A further study could explore this after a change in teachers' practice.

Finally, it must be acknowledged that it is important to encourage and support children in the language they use to help explain their learning. Comments such

as Bridget's in Chapter 4.3 about how painting was fun and didn't feel like learning, should be followed through by adults in the classroom. This would help her develop the language needed to describe this, as it appears that she may have a sophisticated understanding, which should be explored further. The language of learning does have an impact, which can be seen in a few of the responses. This needs to be used daily by teachers if an understanding of the learning process is to be further developed.

10.1.3 Implications for Helping Children Develop Metacognitive Skills

Looking at the findings from Chapter Eight there are further implications the school. These additional interviews indicate that metacognitive strategies can be taught and the children using these strategies demonstrate a high level of resilience, which is important for learning. Whether these strategies are taught as part of a programme, scaffolded by teachers in a group situation or approached on a need-by-need basis, they are important for maintaining a positive outlook on meeting challenges within learning.

Considering what might support the children's needs best will be the focus of further research and discussion with staff, as we clearly already have different practices developing within school which can be seen in some children's more sophisticated responses. These practices need sharing with all staff as examples of best practice.

10.2 Concluding Thoughts

In summary this study demonstrates that elements of metacognition are evident in children aged between four and six, and support the findings of Larkin (2010) and Whitebread et al (2007). The study shows in each strand of the research that the role of the adult is key in ensuring firstly, that the children express what they know and secondly, in scaffolding the development of further skills. It is crucial for the optimum progress of the children that they are able to develop these skills to support their learning in terms of skills and knowledge, and also the 'learn how to learn' skills they will need to become life-long learners.

Considering the findings surrounding the roles of the adults in the classroom in this area of development, specific staff training will be central to developing metacognitive skills in FS2 children within the school. The research has not considered other settings, but should training and further research into these areas show that children's metacognitive development and their academic progress is improved, then this may be relatable to teaching in other schools, teachers or the wider education community.

When starting the project, I felt that developing aspects of metacognition, perhaps through a specific method of teaching within the Foundation Stage, could improve academic outcomes for children in the Foundation Stage and in their future development. As a result of the study and investigation, and the emerging nature of the findings in relation to the main research question, 'Which factors contribute to a young child's ability to learn how to learn?', I have arrived at the conclusion that altering the way teachers approach day-to-day teaching,

may well be more effective than planning specifically for a particular intervention or strategy to develop metacognitive skills and knowledge.

The variation of responses from different children in different classes in all four strands of the research demonstrates the influence the teachers have over all aspects of development. This study has shown that the potential benefits of teaching children in FS2 how to 'learn how to learn' are manifold. It is with this in mind that the practice of teachers, within the school, needs to adapt and change over time, to ensure all children benefit from the findings, whilst we continue to evaluate and develop our practice.

Appendix One

Letter of Consent for Parents of children at XXXXXX Primary School in FS1 and FS2.

Dear Parents and Carers

We are always looking at ways to improve the learning experiences of children within school in order that children can achieve their potential. Over this new academic year I will be undertaking a research project supervised by the University of Durham with the children in the FS1 and FS2 classes. This research project will look at how children understand the process of learning and how we, as teachers, can support them to understand how they actually learn even better.

Over the course of the year I will be observing the children's playing and learning in the classroom, completing some activities with the children which will be very similar to those they do with adults on a daily basis and looking closely (as we always do) at the progress the children are making. The basic idea is that by altering either the language we use with the children, the activities we provide or even considering their development from a different perspective we can improve their learning experiences. My research project is to look at what changes could be made to help children learn better.

The results will form part of a written report for the University but I will also provide a summary of what I have found out to you the parents. Of course, if, as a result of the research, we think that we can change our teaching in ways which will help your children to learn better we will certainly do so.

I must stress that no child or member of staff will be identified by name in either the report to the University or in the summary for parents.

I would like to include as many children as possible in the research; as you are aware every child is different and every child learns in a different way and by having as wide a group of children included in the research as possible we will be able to get the best results.

Please be assured that your child will not be aware of anything different in their classroom. All activities will take place in the classroom with the adults they know and work with as part of the normal classroom practices.

If you are happy for your child to be part of the project please could you sign and return the consent form below.

If you would like any more information about this project please come to the information evening on …….. or pop in and arrange to see me for a chat.

With thanks in advance

Helen Davey

Headteacher

……

I would like to attend the information evening to get further information.

Yes/no

I give permission for my child to be part of the research project

Yes/no/wait until after the information evening.

Childs name:

Class:

Parents Signature:

Appendix Two

Eddie the Elephant

The mediating toy for the Pupil Interviews

Eddie the Elephant

Appendix Three

Examples of the Photographs used in the Pupil Inteviews

The Carpet Area

The Computer Area

The Dolls' House

The Role Play Area

The Writing Area

The Painting Area

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